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A SOCIAL SCIENCES

AA	PHILOSOPHY AND RELIGION
AB	HISTORY
AC	ARCHAEOLOGY, ANTHROPOLOGY, ETHNOLOGY
AD	POLITICAL SCIENCES
AE	MANAGEMENT, ADMINISTRATION AND CLERICAL WORK
AF	DOCUMENTATION, LIBRARIANSHIP, WORK WITH INFORMATION
AG	LEGAL SCIENCES
AH	ECONOMICS
AI	LINGUISTICS
AJ	LITERATURE, MASS MEDIA, AUDIO-VISUAL ACTIVITIES
AK	SPORT AND LEISURE TIME ACTIVITIES
AL	ART, ARCHITECTURE, CULTURAL HERITAGE
AM	PEDAGOGY AND EDUCATION
AN	PSYCHOLOGY
AO	SOCIOLOGY, DEMOGRAPHY
AP	MUNICIPAL, REGIONAL AND TRANSPORTATION PLANNING
AQ	SAFETY AND HEALTH PROTECTION, SAFETY IN OPERATING MACHINERY

LINGUISTIC IMPERIALISM AND THE ENGLISH LANGUAGE: A REVIEW OF LITERATURE

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Abstract: The aim of this review is to explore the available literature on the subject of linguistic imperialism, specifically related to the English language and its spread around the world. In order to do so, a search was conducted using the open source search engine Google Search. Using a set of criteria, some 700 initially analysed scholarly works were reduced to a small number that were then explored in detail. The results of the search showed that the concept of linguistic imperialism was coined by author R. Phillipson in 1992 to explore how certain languages dominate others, the former often being the language of colonising entities, with the effect of undermining local languages and in some cases even erasing them. Several authors who have explored the subject of linguistic imperialism have done so through the prism of education and the teaching of the English language, while some have negated the underlying principles of Phillipson's initial assumptions, thereby refuting the very concept of linguistic imperialism.

Keywords: Linguistic Imperialism, English, English and Colonialism, Language Imperialism

1 Introduction

This review article aims to explore the subject of linguistic imperialism, with a focus on the English language, through examination of existing scholarly works on the subject. In order to do so, a search for literature will be conducted using open source search engines, and the results of that search will be outlined in this review.

In the following sections, first, a background will help explain the concept of linguistic imperialism as well as the role of the English language in the area of linguistic imperialism. Next, the search methodology that was employed will be detailed in full, including the criteria used to include or exclude results. Following that, the results of the search conducted will be explored in details to understand what they reveal about the subject of linguistic imperialism. Next, the results of the search will be discussed further, following which a conclusion will sum up some key areas of potential future research.

2 Background

The concept of linguistic imperialism was born from a work by author Robert Phillipson, who used the book to discuss the spread of the English language, in particular, through teaching, the role of English as an international language, and how and why the language has increasingly become the dominant language. In particular, the book explored how English has spread to different parts of the world, including 'third world' countries.

2.1 Linguistic Imperialism

According to Phillipson (2009) "linguistic imperialism is the notion that certain languages dominate internationally on others. It is the way nation-states privileged one language, and often sought actively to eradicate others, forcing their speakers to shift to the dominant language." (Phillipson, *Linguistic Imperialism Continued*, 2009) Given even its title (the use of imperialism in the phrase 'linguistic imperialism' intentional) and the above-given definition, the concept is strongly linked to colonialism and colonial issues. As countries conquered others, they also imposed their languages on the native populace, thereby erasing native languages or at least undermining them. Phillipson (1992) has argued the spread of English, specifically, is a form of neo-colonialism and linguistic imperialism. (Phillipson, *Linguistic Imperialism*, 1992)

An alternative definition was offered by Agyekum (2018), specifically in the context of colonization in the African continent. Agyekum argued that 'actively' eradicating and 'forcing' colonial subjects on the issue of language by colonizers may be too harsh, in terms of the language used. He states that

moreover, this was not true in the case of African colonies. Instead, he proposes that the working definition of linguistic imperialism be "a linguistic situation where the indigenous people are gradually onscientized to shun their indigenous languages and adopt foreign languages because of the benefits they expect to derive from them. They are made to believe that their languages cannot be used in any transaction in education, economics, science and technology but instead a foreign language is the best" (Agyekum, 2018).

Phillipson's definition focuses on an intentional and somewhat aggressive attempt by those speaking or teaching the dominant language to eradicate other languages and impose the dominant language over others. Agyekum, however, explores linguistic imperialism in a more organic context where circumstances are such that native populations increasingly shun their own language in favour of a dominant language due to the any benefits they may derive or prestige it may confer. However, both definitions point to situations that result in the dominance of one language, often the language of a colonizing power, over others, which has an impact on the spread and usage of local languages.

2.2 English around the World

Despite the projection and discussion in this review article about the dominance of the English language and the potential for linguistic imperialism around the world, it is not the most spoken native language in the world. However, in other ways, the language does dominate. Chinese (all dialects), with 1.39 billion speakers, and Hindi-Urdu, with 588 million speakers, are ahead of English, with 527 million speakers, when it comes to native speakers. (Noack & Gamio, 2015) On the other hand, English is spoken in most numbers of countries, with 101 countries speaking the language. The closest second is Arabic which is spoken in 60 countries. (Noack & Gamio, 2015) Moreover, the British Council estimates that there are 1.75 billion people around the world who speak English at a 'useful level', and proclaim it to the dominant international language of the 21st century (The British Council, 2013).

There are also broader dangers to hundreds of languages spoken around the world, which are at risk of disappearing entirely by the end of the 21st century. By some estimates, there are at least 7102 living languages in the world at present. (Noack & Gamio, 2015) However, only 3 per cent of the world's population accounts for or speaks 96 per cent all those languages spoken today. According to UNESCO around half of all the languages spoken today will disappear by the end of this century, especially given that as many of 2000 of the more than 7000 living languages today have fewer than 1000 native speakers. (Noack & Gamio, 2015).

With the English language specifically, authors like Phillipson have particularly criticized the spread of the language through its teaching, often by compulsory means. There are some 1.5 billion English language learners around the world (Beare, 2019).

3 Search Methodology

The first step to identifying relevant literature is conducting a search. In order to do so, a number of steps were followed. These steps are outlined in this section. First, a number of key words were devised that could be input into search engines. Second, the search terms were input on an individual basis into the open source search engine Google Scholar, which was chosen in order to maximise the potential number of results.

For each individual search term, as many as 10 pages of results were given an initial examination, each containing 10 results. Based on a set of criteria that will be explained in detail later, the results were filtered down for further exploration. The narrowed down list of results were then analysed and a number were selected for review in this work.

The search terms that were employed are given below:

- Linguistic imperialism
- Linguistic imperialism + English
- Language Imperialism
- Language Imperialism + English
- Colonialism and language imposition
- Colonialism and the spread of English Language
- Impact of imperialism on language

Thus, for each of these 7 search terms, 100 results were considered, for a total of 700 results. Out of these 700, an initial examination and a list of criteria were used to include or exclude a research work, based on reading the abstract alone. These inclusion and exclusion criteria are below:

- Results in English only were chosen. Any results in other languages were not included.
- No time period criteria were applied. However, most works post-date Robert Phillipson's 1992 work on the subject of linguistic imperialism, which coined the context. Thus, works were taken from the period of 1992-2019.
- Only works that focused on the English language alone, or English among a number of other languages were taken. Any works that did not focus the spread or imposition of the English language were not included for review.
- Works that focused on the concept of linguistic imperialism and its impact around the world, specifically the English language, in part or in full, alone were included.

The search results thus narrowed are reviewed in the subsequent sections.

3.1 Linguistic Imperialism: The Case of the English Language

The most seminal work with regard to linguistic imperialism is obviously that of Robert Phillipson's 1992 paper that coined the term and explained the concept, as described in the previous section of this review. Phillipson (1992) argued that the spread of the English language, especially its teaching in the wider international context, and the prominence of English in education around the world, has served to undermine native languages everywhere, and that this was a new form of imperialism, i.e. linguistic imperialism. Moreover, this imposition of the English language has impinged on opportunities for multi-lingual education, by making English the de facto or the default language. (Phillipson, *Linguistic Imperialism*, 1992) Apart from this, Phillipson explicitly linked linguistic imperialism to actual imperialism and colonialism, but stating that since the 18th century, English has spread alongside the intention of those nations that spoke English to occupy and conquer other countries.

This has served not only to endanger the political and economic rights of the conquered countries, as well as their cultures, traditions and ways of life, but also their language and linguistic traditions. (Phillipson, *Linguistic Imperialism*, 1992) Phillipson's ultimate argument was in favour of multilingualism and the need to re-balance international orders so that English is not the dominant language, with a focus to providing resources and opportunities to other languages to ensure that they are not erased.

Phillipson's 1992 work was sharply critiqued by some academics. In particular, Davies (1996) was critical of the work. Davies believed that Phillipson's work was the product of cultural essentialism and was naïve. He also believed that Phillipson focused on the negative aspect of the promotion of English as an international language, and that was essentially born out of liberal guilt, with a hope towards colonial expansion having never existed in the first place. Davies particularly argued that it was impossible to take back colonial expansion and the increasing use of English as a dominant language, even stating that it has been a positive thing in many parts of the world for English to be dominant over native languages. Finally, Davies

argues that by coining linguistic imperialism, Phillipson has not allowed room for disagreement or debate on the subject. (Davies, 1996)

The following year, Phillipson offered his own rejoinder in a 1997 paper, rebutting specific arguments and critiques raised by Davies in 1996. He emphasized that his conception of linguistic imperialism was merely a theoretical construct, and that it was designed so that it could account for 'linguistic hierarchisation'. He in particular defended his placement of linguistic imperialism in the realm of education, stating in part that "Education is a vital site for social and linguistic reproduction, the inculcation of relevant knowledge, skills and attitudes, and therefore particularly central in processes of linguistic hierarchisation.". (Phillipson, *Realities and Myths of Linguistic Imperialism*, 1997).

Apart from this, Phillipson also published an update to his theory of linguistic imperialism in 2009, which served as a reflection on the discourse precipitated by his first publication in 1992. Specifically, the work aimed to evaluate how the global dominance of the English language in domains of power has been maintained, legitimized, and continued to remain entrenched in the 21st century. (Phillipson, *Linguistic Imperialism Continued*, 2009).

Moving away from the author of the concept of linguistic imperialism, i.e. Robert Phillipson, other scholars have attempted to tackle the subject in the years after the initial 1992 book. Canagarajah (1999) came at the issue through the prism of language education in post-colonial contexts. (Canagarajah, 1999) As a native of Sri Lanka, the author used the example of the ethnic Tamil and Tamil-speaking community in the country to explore the pedagogical challenges of teaching English in a post-colonial country. While Canagarajah pointed to Phillipson's work as his source of inspiration, he believed that rather than focusing on the macro, global perspective, as the latter did, his work was more focused on the day-to-day impacts, especially at the level of everyday experiences in the classroom.

In his conclusion, Canagarajah attempted to forge a new path between the unilateral adoption of the English language, and the complete rejection of the same. According to him, there is a 'third way', whereby the native users or 'periphery users' of the English language are allowed to become insiders and use the language on their own terms, rather than being forced to. This way, the language is used to suit their needs. (Canagarajah, 1999)

Agyekum (2018) also discussed the issue of teaching of English in his work, which is not only focused on the English language. Agyekum argues that the link between linguistic imperialism and education, as well as the continued expansion of the English language, has provided a substantial economic force when it comes to teaching the English language. According to the author, teaching and learning the English language is a significant part of the economy of the United Kingdom, with the language itself becoming a commodity that is sold. (Agyekum, 2018).

Apart from this, Agyekum also illustrates how English is a means of gatekeeping in many countries for those aspiring to education. Using Ghana (which is one of the case studies in the paper), Agyekum points to how students in the country cannot enter high school or tertiary educational institutions without passing English language tests. Higher education is quite simply inaccessible to those without competency in the English language. (Agyekum, 2018).

An alternative viewpoint is provided by Ljungdahl (2004), who likened linguistic imperialism as a type of Trojan horse, specifically with respect to English. (Ljungdahl, 2004) In this scenario, the language may have originally been invited or welcomed by a native population, but in the end had ended up 'killing' local languages and dominating local cultures. Ljungdahl too explored the pedagogical implications of English in the classroom; in particular trying to understand what 'type'

of English should be taught in classrooms in countries where English is not the native language. Here, the author offered the example of the English spoken by Aboriginal people in Australia, where the language had been adapted into what can be referred to as Australian Aboriginal English (AAE) (Ljungdahl, 2004).

4 Discussion

The results of the search revealed a number of articles, that when explored further, revealed some themes that are of note. These themes are discussed in greater detail here. It was most evident that author Robert Phillipson dominated the discourse on the subject of linguistic imperialism. As he originated the concept, that too in recent years, all the work on the subject is either by him directly, or in response to his original or subsequent works, or mentioned his work as a starting point.

It was also interesting to note that there wasn't any argument or counter-points amongst the research on whether or not English was a dominant international language. This is also borne out by the statistics outlined in the earlier sections that show the extent of the spread of the English language. However, there was a difference of opinion and points of view on whether this spread of English was negative or positive, and also whether it is the result of force and imposition, or a more organic evolution. For example, authors Alan Davies (1996) and Robert Phillipson (1992, 1997) did not disagree on the fundamental point that English in British colonies was the result of colonisation, often at the expense of native languages.

However, they disagreed on whether this was a negative and whether this was done forcefully or through aggressive imposition. Similarly, author Agyekum (2018) disagreed with Phillipson (1992), stating that colonizing countries' languages have become more organically intertwined with native countries, and that Phillipson's description of aggressiveness and eradication was too harsh.

The researchers also found that in some cases, 'periphery' English speakers, i.e. non-native English speakers in the countries where English has become more important, either through forceful imposition, or through more organic evolution, now prefer to speak in and learn English. There is a sense of prestige conferred to being able to speak English, as outlined by Agyekum (2018) and it can often be the means through which people can obtain higher education, or better jobs.

Finally, one clear through-line for much of the research was the placement of linguistic imperialism in the context of teaching of the English language. Almost all of the researchers focused on how English is being taught and the impact of colonialism on teaching of the English language. Moreover, they explored how teaching of the English language is closely linked to linguistic imperialism as education is a vital site for linguicism. Here also, it is interesting to note that the British Council, for example, has aimed to consistently increase English speaking as a part of its key work in many countries, as pointed out by Agyekum (2018).

5 Conclusion

While there has been a fair amount of research on the subject of linguistic imperialism, with a focus on English speaking and teaching, it cannot be said that it is adequate. There is room for further research, especially on aspects beyond the educational and pedagogical. There is also room to move away and evolve from the original author on the subject, i.e. Robert Phillipson and his assumptions and theory.

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EXISTENTIAL MOTIFS IN SLOVAK LITERATURE WITH THE ISSUE OF THE SHOAH

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Abstract: The study deals with existential motifs in selected fiction and memoir works of Slovak literature, which thematically focus on World War II. and the Holocaust of the Slovak Jewish minority. As we considered the fact that many works of Slovak provenance with this issue were published (especially after 1989), we focused only on a selection of those works, which contains fiction and non-fiction literature and memoir works written by surviving Jews, in which they gave valuable testimony about the Holocaust and anti-Semitism of the war-torn Slovak state and post-war society. Based on the interpretation and analysis of Shoah-themed works, we detect recurring existential motifs: degradation of human dignity, feelings of guilt for one's own survival, Auschwitz traumas, and the motif of The Lost Generation.

Keywords: anti-Semitism, Auschwitz traumas, existentialism, Holocaust, memoir literature, The Lost generation.

1 Introduction

The topic of the Holocaust appeared in Slovak literature in the first post-war years. The occurrence of Judaism in works of Slovak provenance published after 1945 is generally divided into three periods (Vargová, 2011, p. 59). The first period is in the range of 1945 - 1948, when mainly documentary works were published (e. g. Jozef Lánik, Peter Karvaš). 50s - 60s indicates the second period during which were published works by Rudolf Jašík, Ladislav Mňačko, Leopold Lahola and others. The third period is limited to the 1980s and 1990s and is characterized as a reflection and reassessment of the past. During these years, some works by Hela Volanská or Ján Johanides were published.

In the first post-war years, only a few memoir and fiction works were published in Slovak literature, the main theme of which was the solution of the Jewish question during the Slovak state. "Even in the post-war period, when this minority was already decimated to a minimum, the topic of Judaism did not become ideologically appropriate" (Šuša, 2015b, p. 40). The reason was, among other things, the connection of Judaism with capitalism, which was contrary to the position of the nascent socialist establishment, which advocated the gradual nationalization and abolition of private property. Nevertheless, some fiction works about the Shoah were published - perhaps the most famous novel on this subject, *St. Elizabeth's Square* (1962, Námestie svätej Alžbety) written by the author of non-Jewish origin, Rudolf Jašík. This framework also includes the novel *The Death Is Called Engelchen* (1959, Smrť sa volá Engelchen) by Ladislav Mňačko, which is not directly related to the final solution of the Jewish question, but its Jewish character Marta is a symbol of the suffering of the Jewish minority in the post-war period in connection with the existential solution of the traumas that Jews had experienced, although she was not interned in the death camp. And, of course, the work of Ladislav Grosman *The Shop on Main Street* (1965, Obchod na Korze), which was adapted to the Oscar-winning film of the same name, cannot be overlooked. At the same time, a few works by Jewish authors were published, especially in the period up to the 1950s and during the period of political detachment in the 1960s, for example the books of Jozef Lánik *What Dante Did Not See* (1965, Čo Dante nevidel), Manca Schwalbová *The Extinguished Eyes* (1948, Vyhasnuté oči), Hela Volanská *Meeting in the Woods* (1948, Stretnutie v lesoch) and also short stories of Leopold Lahola published in the book *The Last Thing* (1968, Posledná vec). In the case of authors of Jewish origin, it is mostly memoir literature (Lánik, Schwalbová, Volanská), several of them can be termed camp or concentration literature - in the case of memoirs from concentration camps (Lánik, Schwalbová).

The year 1989 and the change of political establishment made it possible to write openly about the Jewish question and the Holocaust. Literature reflecting the issue of Judaism in Slovakia during World War II. and in the post-war years has certain specifics. In particular, memoir works (compared to the period before 1989) by authors of Jewish origin from a non-literary environment began to be published, the aim of which is not the aesthetic experience of the recipient, but the mediation of facts about the Holocaust and concentration camps. At the same time, memoir works were translated into Slovak, which were published in foreign publishers after the emigration of their authors abroad, e.g. the work of Rudolf Vrba, which was originally published in 1963 in Great Britain and was not translated into Slovak until 2015.

2 Materials and Methods

The study is an analysis and interpretation of works of Slovak literature on the topic of racial persecution of Jews during World War II. with a chronological overlap to the post-war period. Based on the fact that a large number of books about the Shoah have been published in Slovak literature (we have managed to identify 73 works), we rely only on selected works, on the basis of which it is possible to demonstrate the researched motifs. In addition to analysis and interpretation, we also use the method of comparison. Since most of the works written by Slovak authors have not been translated into English, translation of the citations was made by the author of the study.

The works that are the subject of comparison must be divided into four groups:

1. Memoir works of Jewish authors: Manca Schwalbová – *The Extinguished Eyes* (1948, Vyhasnuté oči), Hela Volanská – *As at the Foreign Wedding* (2009, Ako na cudzej svadbe), Rudolf Vrba – *Alan Bestic – I Cannot Forgive* (1963, Nemôžem zabudnúť. Utielkol som z Osvienčimu), Jozef Lánik – *What Dante Did Not See* (1965, Čo Dante nevidel), Iboja Wandall-Holm – *The Mulberry* (1991, Moruša)
2. Fiction works of Jewish authors: Leopold Lahola *The Last Thing* (1968, Posledná vec), Andrea Coddington – *The Jewess* (2010, Židovka), Peter Karvaš – *The Night in My City* (1979, Noc v mojom meste); short story *The Old Man and Fate* (1979, Starý pán a osud), Milan Richter – *The Wrecked Temple in Me* (2002, Vo mne zburaný chrám), Ladislav Grosman – *The Shop on Main Street* (1965, Obchod na Korze)
3. Fiction works of non-Jewish authors: Rudolf Jašík – *St. Elizabeth's Square* (1962, Námestie svätej Alžbety), Ladislav Mňačko – *The Death Is Called Engelchen* (1959, Smrť sa volá Engelchen), Anton Baláz – *The Rift* (2014, Trhlina), Klára Jarunková – *The Black Solstice* (1979, Čierny snovrat)
4. Fiction and non-fiction works of non-Jewish authors based on the personal testimonies of the surviving Jews: Anton Baláz – non-fiction *The Transports of Hope* (2010, Transporty nádeje); novel *The Land of Forgetting* (2000, Krajina zabudnutia): from the personal testimonies of Pavla and Eugénia Schreiber; short story *Simon the Pilgrim* (2014, Šimon Pútnik): from the life story of Martin Rodan, Ivana Havranová – *The Abducted* (2017, Odvlečení): written as a dialogue with surviving Jews

Since the main subject of the work is the analysis of existential motifs, in the introductory chapter we will also deal with the basic postulates of the philosophy of existentialism. We will focus mainly on the work of Martin Heidegger *Being and Time* (1927, Sein und Zeit). We deliberately choose his work in connection with the Jewish question as a contrast to the existential experiences of Jews, because Heidegger was a supporter of the German idea of National Socialism and was involved in the service of Nazism. Despite his political beliefs, he had an affair with his Jewish student, Hannah Arendt, who is

the author of the book *Eichmann in Jerusalem/ A Report on the Banality of Evil* (1963). However, from the point of view of existential motifs in literature, the works of French philosophers and fiction writers Jean Paul Sartre and Albert Camus are also very important. We will develop the philosophy of Karl Jaspers, a representative of the German line of existentialism, in connection with the question of guilt (of Jews for their own survival).

3 Existencialism

In most works about the Shoah, it is possible to recognize certain peculiarities. It is mainly about capturing a personal traumatic experience, beating inability to change the situation, loss or, conversely, the strengthening of faith, "often the intertwining of personal and socio-historical aspects and the attempt to describe this phenomenon from several, often scientific, aspects as a machinery of power and evil" (Šušá, 2015a, p. 130). All these specifics can be described as existential motifs, which are characteristic for the entire Slovak literature of the post-war period. This is especially true for memoir literature with the main theme of the final solution to the Jewish question.

The existential line of Slovak literature in the 1940s was associated mainly with the French philosopher of existentialism, Jean Paul Sartre, while "it was primarily an emphasis on motives such as freedom, will, possibility, anxiety, fate, the tragic feeling of life, while the existentialist conception of these motives accentuated the overlap to the ethical, social and political level" (Domorák, 2017, p. 193). Existentialism or the philosophy of existence deals with the human being in its broadest sense of meaning, while existence has no direction at first (after the birth). It could be said that they were inclined to the Plato's fall to birth¹. The term throwing into the world (as a parallel to the Plato's fall into birth) is one of the basic ontological concepts of the philosophy of Martin Heidegger, who developed the issue of human existence in his main work *Being and Time*. Heidegger calls human existence in the world as a stay (Dasein) in a specific time and space, and these two quantities are not determined by one himself (he derives the concept of throwing into the world from this). From this springs the existential dissatisfaction of people amplified by the finiteness of being at the moment of death. And it is the awareness of death that brings dynamism into existence, because if we remove the infiniteness of being, the being itself will also disappear (Heidegger, 2002, p. 272).

Existentialists generally emphasize the importance of death. At the same time, individuals are most aware of their own existence in borderline life situations, when experiencing fear, danger, near death. The above explicitly implies the frequent occurrence of existential motifs in fiction and memoir literature about the Shoah – the main and episodic characters of the stories balanced between life and death, either during internment in labor camps, where they saw death up close or were directly threatened by death, as well as in efforts to resist the fate of the Jewish minority in Central Europe by fleeing concentration camps.

For Jean Paul Sartre, who belongs to the atheistic line² of existentialism, death is the final point of human existence. Human life has no specific goal or direction. Life is therefore absurd, as is death, because there is not posthumous redemption. In connection with this statement, Sartre's philosophy might seem in opposition to the rich spiritual life of the Jews believing in God and adhering to His commandments. During World War II., however, it was his philosophy that largely reflected the inner

¹ In his teaching about the soul, Plato argued that at the birth of man the human soul involuntarily moves from the perfect world of ideas (true being) to the imperfect world of things (false being) - he calls it the term fall into birth. The soul does not remember the world of ideas, during life it tries to remember it through learning - Plato calls it anamnesis. In this we see a certain parallel with the philosophy of existentialism, with an involuntary being, which is not intended at birth, it is formed during a person's life.

² Existentialism is divided into two directions: atheistic and theistic. From the theistic direction the Slovak as well as Czech literature were influenced by French philosopher Gabriel Honoré Marcel. See also: Gallik, Ján - Vargová, Zuzana: Durychova novela „Boží duha“ vo filmovom spracovaní. In: *World Literature Studies*, vol. 2, nr. 3, 2019, pp. 28 - 41.

disposition of a believing Jew who, under the influence of inhuman conditions in the camps, loses his faith, does not believe in God, or in the meaning of one's own existence. The absurdity of life is also the basis of Albert Camus' philosophy. In his works he captures the tragedy of human existence, brings a reflection on the meaning of one's life, concluding that the basic feeling and state of man is the absurdity in the relationship between him and the world resulting from the knowledge that the world itself has no goal and thus sense.

4 Existential motifs in the literature about Shoah

Based on a comparison of selected works of Slovak literature of the post-war (1945 - 1989) and post-revolutionary period (after 1989), it is possible to detect basic, recurring existential motifs:

- feelings of humiliation, degradation of human dignity and loss of identity - man as a number without a name, man as an animal or otherness of Jewish blood,
- feelings of guilt for one's own survival manifested in the first post-war years exacerbated by the disappointment of the inhabitants of towns and villages from the return of the surviving Jews,
- feelings of anxiety and fear, recurring nightmares and phobias - can be termed Auschwitz trauma haunting survivors,
- the motif of The Lost Generation of young people who had to deal with feelings of early adulthood and the problem of reintegration into life in the post-war period.

4.1 The Loss of Identity

The motif of the degradation of human dignity is connected with the internment of Jews in labor camps in Slovakia or in German concentration camps. It is related to the inhuman conditions in which the Jews found themselves - lack of food, poor hygiene, but also feelings of constant humiliation by the guardsmen, often in connection with the forced nudity to which they were exposed upon arrival at the camp or during selections. In the camp, the man lost his name, his personal belongings, which testified to his identity, the prisoners became only numbers without a name. Iboja Wandall-Holm mentions this aspect of the loss of human nature in her book: "*They threw all the objects that testified to our identity into a large basket. They lay there at their mercy, betrayed. We lost the last rest of our identity with clothes*" (Wandall-Holmová, 1998, p. 227). Manca Schwalbová also calls the prisoners numbers: "*Hundreds die every day by being shot or in the gas, from typhus or malnutrition. But hundreds of new slaves, new numbers come every day*" (Schwalbová, 2011, p. 32). And she further writes: "*John and William were executed. I was left alone in the midst of numbers*" (ibid., p. 71). Rudolf Vrba captured it in a similar way - unification, erasing of external differences between people associated with the loss of name and identity leads to the creation of a herd of anonymous prisoners in the camp: "*Now I belong to the herd, striped clothing, tattooed number, anonymous, unknown, and if I am fast enough and mow goodness, as they say, I will remain inconspicuous*" (Vrba - Bestic, 2015, p. 120). Schwalbová combines the loss of human dignity with the ability to kill others for their own rescue: "*We are standing. We haven't felt hunger for a long time, just hatred, crazy hatred. We would be able to kill dozens of friends. So that we can finally sit down*" (Schwalbová, 2011, p. 112).

Hunger, the desire for food and its lack changed man's behavior into an animal. In his memoir, Rudolf Vrba writes about it: "*That's when I saw life in a concentration camp, which degrades a human being. Like jackals, they threw themselves on leftovers, fought and growled. At that time, I saw another aspect of life in the camp, something completely foreign to my nature, something disgusting after all*" (Vrba - Bestic, 2015, p. 92).

It was in the degradation of their dignity to the level of an animal that the Jews saw a way of self-salvation, of thinking only of one's own survival, of not looking at others. In an interview with Ivana Havranová, Marta Szilárd says: "*It was all so very*

humiliating ... But let me tell you something. When a person is humiliated completely to the beastly level, he thinks only of how to survive" (Havranová, 2017, p. 30). In a memoir book written in novel form, Jozef Lánik goes even further - he degrades man to the level of an animal and elevates the animal to a man. In the eyes of the Nazis, the prisoners became dogs, animals (dogs) were promoted to humans. This is evidenced by the instruction of the SS man, who issued to the dogs: "Man, bite the dog!" (Lánik, 1989, p. 55). The existential paradigm of degrading human dignity develops in the work also in another aspect. People do not become an animal only in the eyes of fascist commanders. By limiting people in the camp to satisfying their basic biological needs, the only thing that "controls their mind is the natural instinct of self-preservation" (Vargová, 2011, p. 73).

The motif of degraded human identity also found its way into the fictional work of authors of Jewish and non-Jewish origin. The Jewish author Leopold Lahola combines the loss of human dignity with the personal death of an individual - in the short story *Bird's Song* (Vtáčí spev) - the story does not take place in a concentration camp, but the main theme is the humiliation of a Jew in front of others: "Tears flowed against his will. How one should live now was in his mind. After all, how it is possible to get down from the branches, stand on both feet and live on as if he had never been on that tree. [...] - You killed me in cold blood, - Vogel repeated more quietly, even if he didn't care so much whether the one standing down there heard it or not" (Lahola, 1968, p. 65).

Rudolf Jašík also writes about the loss of identity with the loss of his name - before coming to the camp and tattooing the number of the prisoner instead of the name, the Jews were still people with their own identity, although they were outcasts: "The outcasts lie, sit and remain silent. They still have names, surnames, and they still flee to their memories, there, behind the rough walls of the Jewish school, into the streets and alleys of the city under the vineyard hill" (Jašík, 1976, p. 257). Then he named the Jews before being transported to the German concentration camps only by the term "name". He wanted to emphasize that they had not yet lost human identity associated with the transformation of a man into a number without a name after arriving at the camp: "Names stand, names wait. Their names still remain" (ibid., p. 273). In Rudolf Jašík's work, we also encounter in the introductory chapters the motif of the differentness of Jewish blood in comparison with non-Jews. He used the metaphor of drinking Jewish blood to herald the future mass murder of Jews: "He could feel the blood pulsing in her veins, quite ordinary, red, and yet different, extremely different - Jewish. He did not know that the city would soon be flooded with herds, which would drink it in litres, hectolitres until suffocation" (ibid., 31). Hela Volanská also depicts Jews as others, different from the majority, in her memoir. Like Igor from Jašík's novel, she does not distinguish between Jews and non-Jews, because man "will be man, simply - man, no Jews, non-Jews" (Volanská, 2009, p. 68). The otherness of the Jews, their culture, religion, way of life and, last but not least, their physical appearance was the cause of creating negative stereotypes associated with the idea of Jewish control of society. And it was these attitudes towards the Jewish minority that led to the hateful, xenophobic manifestations that culminated during the Holocaust. Looking back on how far hatred towards minorities can lead, in central Europe "there spreads further the myth of the domination of the Jews, on which anti-Semites [...] have been working hard for centuries" (Gallik, 2018, p. 84).

4.2 Guilt for One's own Survival

The events of World War II. and the final solution (not only) to the Jewish question raise questions of guilt, or rather responsibility for the deaths of millions of Jews or other racially and politically inappropriate people. Karl Jaspers, a representative of the German line of philosophy of existentialism, addresses this issue in his book *The Question of German Guilt*, where he distinguishes four types of guilt (Jaspers, 2006, pp. 25 - 26):

1. criminal guilt: consists in a deliberate violation of the law, the crime is an objectively provable act violating the legislation,
2. political guilt: unlike criminal guilt, it is based on the guilt of statesmen, with the consequences of their actions being borne by nationals,
3. moral guilt: it is the fault of the individual for his actions, while the person is also responsible for his political or military decisions,
4. metaphysical guilt: it is based on solidarity between people, everyone is co-responsible for injustice in the world, especially for the crimes that take place in his presence.

The political but also the moral guilt of the political representatives of the states, who agreed with the deportations of Jews, the citizens of that state, can be explicitly deduced from this division. In defining moral guilt, the attempt to defend their actions by claiming, that there was a war and they acted under dictation from fascist Germany, is groundless. Because it is never true that an order is an order (Jaspers, 2006, p. 25 - 26).

In opposition to the guilt of the Nazis is the guilt experienced by the surviving Jews after returning from the concentration camps, which is a recurring motif in Shoah-themed memoir literature and fiction. A specific case is the short story *The Rift* from the book *Portraits of Survival* by Anton Baláž. In his work, in addition to the guilt of Jews who survived, he also addresses the issue of guilt of non-Jews in relation to Jews who became victims of the Holocaust. Their guilt stems from their indifference to Jewish fate, from the fact that they did nothing to save them. It persecutes them in the form of a nightmare, delusions, which in the story are a metaphor for their impure conscience. These negative phenomena from the past, which accompany them to the present, are symbolized by a rift in the land through which individual events from the time of the war and the deportation of Jews to concentration camps come to the surface: "But the rift is advancing, the past is rolling on them from all sides ..." (Baláž, 2014, p. 239). The remorse here is linked to justice, a certain satisfaction against the Jews, who also became victims of mass murder for the indifference of the non-Jews and with their tacit consent, because "the past is just waiting, patiently, for years and decades, for the smallest rift to open somewhere to attack us in the name of justice" (ibid.). From this fact follows (based on Jaspers' division of guilt) the metaphysical guilt of non-Jews, their co-responsibility for the actions that took place in their presence.

In connection with the guilt of non-Jews against the fate of the Jews, the question of white Jews arises. They were people of non-Jewish descent who hid Jews during the persecution or helped them escape. Evidence of the help of the non-Jewish Slovak population to the Jews is the number of awarded Slovaks with the title of Righteous Among the Nations, which is awarded by the organization at the Yad Vashem Memorial. By the end of 2019, 597 people from Slovakia were on the list.³ White Jews are directly mentioned by Ladislav Grosman in his book *The Shop on Main Street*. This term is associated with the character of Tóno Brtko, who was a simple, kind-hearted man, but was forced by his own wife and brother-in-law to forcibly seize the haberdashery of the old Jewish woman Lautman. And it is his brother-in-law Kolkocký who calls him a white Jew: "You are acting like a white Jew. A white Jew is worse than an ordinary Jew because he is not a Jew and helps a Jew" (Grosman, 1992, p. 59). The position of a good man and at the same time a fear for his own life caused him an existential disunity in deciding whether to give a Jewish woman to the Nazis for his rescue or try to save her.

In Baláž's work with a Jewish theme, feelings of the Jews' guilt for their own survival also appear. Apart from the short story *The Rift* (in the character of Aranka, who was the only survivor of the Shoah from their large family), this motif became the basis for the portrayal of the character Miriam from the novel

³ <https://www.pribehyspravodlivych.sk/spravodlivi-medzi-narodmi/>

The Land of Forgetting. Miriam, like Aranka, was the only one who returned home after the war, to an apartment that no longer belonged to her, because it was occupied by their former maid. Miriam tries to make up for her survival by working for the Palestinian Authority, which was a co-organizer of a large Jewish aliyah to Israel. However, the most tragic character in the novel is the Jew Kalina, who, among all the characters, experiences the most of his own existence. Unlike Miriam, who lost her relatives under the influence of political circumstances, Kalina himself sent his family to death in a concentration camp, when he added the number of Jews to the transport with his family members on the eve of Jewish largest feast day Yom Kippur. After the war, he experienced literally existential torments associated with feelings of guilt for his life and the death of his loved ones. He is haunted by memories of his wife Rosa, who asked him for forgiveness before his deportation (Yom Kippur is a holiday of reconciliation, when Jews ask for forgiveness for those they have hurt), although she has not blamed him: "she asked me for forgiveness ... Me, who voluntarily sent them to death, she asked me for forgiveness" (Baláz, 2014, p. 188). The whole story of Kalina captured in the novel is his preparation for the transition to eternity. He ended his life under the weight of conscience by suicide.

The motif of guilt for one's own survival is also in the prologue to Ivana Havranová's book *The Abducted*, in which Pavel Traubner writes: "For many following years, I woke up sweaty of a nightmare and terrible remorse about why I survived, and thousands of my children's peers, who were guilty only of being Jews, ended up in gas chambers and flew out soot through the chimneys of crematoria. What's more, sometimes this remorse catches me even after seventy-five years since I was born" (Havranová, 2017, p. 6). In an interview with Alexander Bachnár, Havranová uses a quote from Ellie Wiesel, who claimed that the Holocaust did not have six, but seven million victims. "The seventh million are the survivors" (ibid., p. 9). And for the rest of their lives, they will bear the existential burden of their own survival.

In the same way, Leopold Lahola in the short story *Conversation in the First Person* (Rozhovor v prvej osobe) connects the survival of Jews with a dead existence, their life is not a full-fledged being. He inserted these motifs into the character of a young doctor who, despite surviving the Shoah, tried to die. He considered his being to be corrupt: "...I myself am what is wrong. I'm spoiled. The death took some of us, the others were spoiled by death [...] We don't live, we just stayed alive. And that is the difference" (Lahola, 1968, p. 180). According to the author, the survival of the Jews, who moved in the camps on the border of life and death, is a sin against nature, their being is a kind of life after death. Nature has not adapted man to survive in extreme conditions of long-term starvation and physically demanding work. Based on this claim, Jews had to die while being interned in concentration camps and exposed to these superhuman conditions. Some of them nevertheless survived, but did not know what to do with their lives, which, according to the rules of nature, should no longer belong to them: "... and I do not know, kill me, I do not know what to do now, when I did not perish" (ibid., p. 181).

A similar motif of coping with the past became the main theme of Lahola's short story *The Funeral of David Krakower* (Pohreb Davida Krakowera). The character of Keldich appears here as Krakower's conscience. He came to remind him the incident from the execution of the Jews in the camp, when the singer Krakower sang a funeral song with the disapproval of the surrounding Jews waiting to be executed: "Who gave the singer the right to make it a legitimate funeral, they asked with crushed glances" (ibid., p. 172). And he saved his life by this act, but not the lives of others. From Keldich's point of view, Krakower changed the act of murder to the act of a funeral rite, thus mitigating the guilt of the executioners: "What happened there was multiple murder. It should have stayed a murder forever. However, you made the murder a rite" (ibid., p. 173).

Ladislav Mňačko also deals with the meaning of the survival of Jews (but also non-Jews) after the war in his novel *The Death Is Called Engelchen*. The character of the Jew Marta is one of the most tragic characters in Slovak literature. "War takes her everything, including respect for herself" (Adamická, 2019, p. 39). Although she did not experience cruel treatment of the Jewish minority during the war in connection with the final solution to the Jewish question, the way she managed to save herself (collaborating with the Germans) made her a human wreck and her survival and subsequent unnecessary existence is in contrast to millions of Jews whose death was pointless. Volod'a, who blames himself for burning the village Ploština, asks the existential question of the meaning of his and Marta's survival: "Did it have to be paid like this? It had to, of course, but then the war was to be consistent, not to keep alive wrecks like Martha ... like me ... Wouldn't it be better for her - not to live?" (Mňačko, 2016, p. 37). He sees his disability as a just punishment for guilt for burning the village: "It seemed fair to me that I would remain crippled. I will be at least partially clean with the past, no one will be able to say about me - behold, one from Ploština, one of those who caused it" (ibid., p. 30). Unlike Marta, Volod'a had a sense of satisfaction that helped him deal with his guilt in connection to the victims of the village. It was different in the case of Marta, who could live a full life after the war and be grateful for her own survival. However, she was not punished for the deeds she committed during the war to survive. She did not bear the weight of her existence and ended her life by suicide. The character of Marta is a kind of parallel to the person of Mata Hari (ibid., p. 41), a Dutch courtesan and a World War II. spy who was executed in France for spying for Germany. However, Mata Hari, unlike Marta, was punished for her espionage activities.

4.3 Auschwitz Traumas

The feelings of anxiety and fear that persecuted the surviving Jews in the postwar period can be generally described as Auschwitz traumas. They are very closely related to the horrors experienced in the concentration camps, and it could be said that they are a direct consequence of them. At the same time, they result directly from the loss of identity, from the humiliation and degradation of human dignity. In the post-war period, the memories returned to Jews in the form of a recurring nightmare, but also in the form of subliminal phobias. All this was compounded by the grief of the loss of loved ones who became victims of mass murder.

Constant fear, feelings of a certain form of insecurity were mentioned in interviews with Ivana Havranová by several surviving Jews. Juraj Kohlmann, who spent most of his childhood in the Bergen-Belsen camp, describes it in this way: "I have been afraid and anxious ever since. It comes every time I get into a more difficult situation. You just cannot get rid of it. All my life I have been accompanied by a form of uncertainty. And I have seen this in almost all of us" (Havranová, 2017, pp. 66 - 67). Oľfia Winterová mentions this in a similar way. She remembers from Auschwitz especially the great fear that haunts her to this day: "I don't remember anything! It's just that I was very scared! I was afraid. Still! And I think about that fear sometimes now. It returns" (ibid., p. 120). Gertrúda Zúbeková directly connects her anxiety with the fear that the situation could be repeated: "I still have that fear in me! Whether they will not expel the Jews again somewhere in Germany!" (Havranová, 2017, p. 81).

The Auschwitz traumas also got into the poetry of the Jewish author, Milan Richter, who was born in the post-war period, but his family was marked by the tragedy of the Holocaust. The Holocaust and the fates of Slovak Jews were included in his collection *The Wrecked Temple in Me*, which contains 33 poems in Slovak, 11 of which he also translated into English and 7 into German. He wrote the poems between 1972 and 2002, and except for those one which were published in the collections *The Pollen* (1972, Peľ), *The Safe Place* (1987, Bezpečné miesto), *Roots in the Air* (1992, Korene vo vzduchu), *Behind Velvet Curtains* (1997, Spozna zamatových opôň) and *Angel with Black*

Feathers (2000, Anjel s čiernym perím) the book contains even never published poems. The motifs of the Holocaust are depicted as recurring nightmares persecuting survivors, e.g. in the poem *On the Interface* (Na rozhraní) (Richter, 2002, p. 11).

In her novel *The Jewess*, Andrea Coddington very sensitively describes the lingering fear of the main character's mother as a result of her internment in a German death camp. Throughout the text, there is the narrator in the first person (self-narrator), whereby the story gets the character of memoirs, acquires authenticity and lets the reader believe that the story has become or it is really possible. Fear is associated with the fear of lack of food and thus the preservation of their lives, but also with feelings of loneliness and the loss of their own peace: "Only later did I understand why food was paramount and the fear of being hungry haunted her all her life. Only later did I understand the pain in her eyes. Not just so oppressive, dense and never fading. Mom could not be enjoyed. Be calm. The past bound her. She was hated as a young girl" (Coddington, 2010, p. 28). These feelings, which are the result of trauma, haunted her for the rest of her life, more intensely shortly after the end of the war. The author derives this from the iniquity experienced, the humiliation caused by Christians: "I know she was terrified. Mom never stopped being afraid. It was long after the war and she still had a panicked fear of policemen, army, soldiers, men in uniform. [...] She experienced injustice when others pointed on her just because they were Christians" (ibid.).

The Auschwitz traumas become one of the main themes of Anton Baláž's novel *The Land of Forgetting*. Although the plot of the novel takes place in the first post-war years, during the summer of 1949, the author in a retrospective returns to the camp experiences of two main characters, Miriam and Erna, and then captures how the horrors they experienced affected their post-war life. The Holocaust memories of Miriam and Erna are the memoirs of real Jews Pavla and Eugénia Schreiber, whose life story became an inspiration for him to write the work (Pavla Schreiberová is the mother of Martin Rodan, currently an associate professor at the Hebrew University in Jerusalem who emigrated to Israel in 1968). In the work, the author develops two Auschwitz traumas that fundamentally influenced the existence of the surviving Jews, namely a phobia of nudity and a phobia of dirt. At the same time, he looks for solutions to cope with trauma and start living a full life. These motifs run through the whole story of the novel, with a gradual rebirth of the main characters, coping with the past and overcoming the fear of one's own nudity and contact with unclean things.

The author develops the phobia of nudity in the character of Miriam. This morbid fear stems from the forced nudity to which she was subjected after her arrival in Auschwitz. It was a feeling of shame for the young girls, many of whom never undressed before strangers. And it was "that forced nudity that made her a spoiled woman" (Baláž, 2014, p. 32). A phobia of nudity prevents her from living the full life of a young woman, she is afraid of touch and intimate coexistence with a man. In an interview with Jakub, she admits: "I am not yet ready to answer a man's touch. I have experienced too many such touches ... glances at my body that I did not desire ... I am a humble and corrupt woman, Jakub" (ibid., p. 43). Miriam's forced nudity stands in stark contrast to the voluntary nudity of prostitutes, who she met regularly and constantly reminded her the depravity of her own body: "Their sensual laughter, cleavage, sales but unforced nudity irritated Miriam when she became her involuntary witness on her return to her apartment in the alley behind the back of the neological synagogue. It always reminded her the different, forced nudity of her own body, from which she still cannot break free" (ibid., p. 19). On the one hand, the nudity, existential and morbid fear of one's own body complicates her the social life, especially coexistence with the opposite sex, but on the other hand, she is aware of the need, even the necessity, to overcome these traumas. She feels owed to thousands of other bodies, other lives that ended up in cremation furnaces (Baláž, 2014, p. 35).

From the opposite point of view, Leopold Lahola captures the impact of forced nudity on Jewish survivors in the short story *The Random Acquaintance* (Náhodná známosť) from the book *The Last Thing*. Nudity, or rather disgust from nudity, is depicted here from the point of view of a man who saw a number of exposed, humiliated female bodies during the selections, and this feeling of disgust persisted in him even in the post-war period. In a medical experiment in which he participated, it was bad for him to look at naked women: "I was sick [...] They disgusted me. One human body is beautiful, when there are many of them, they cease to be human" (Lahola, 1968, p. 218).

The phobia of dirt is the second Auschwitz trauma captured by Anton Baláž in the character of Erna in the novel *The Land of Forgetting*. Erna came to Auschwitz a little later than Miriam, so she was not concerned with forced, degrading nudity after arrival to the camp. For this reason, she did not suffer from phobia of nudity in the post-war period, but due to poor hygienic conditions in the camp, she could not bear contact with objects that were dirty from her point of view. It affected her daily life, restricted her in trivial things like sleeping under a blanket or traveling by public transport, because "when I see a dirty railroad carriage, dirty clothes, lousy military blankets, I get so disgusted that I can't control myself" (Baláž, 2014, p. 100). The phobia of dirt stemmed directly from the camp dirt, which she did not even realize during her internment, she did not perceive it, but the disgust got into her subconscious and affected her further life in the post-war period. However, she did no longer connect the dirt only with Auschwitz. She talks about the dirt of the East, which is related to culture, the way of life of Eastern countries (she came to this conclusion after visiting Tel Aviv): "There she understood that there was such a thing as the 'dirt of the East', that it was not just something related to Auschwitz, but it had to do with the country, with the culture, with the world getting so badly dirty" (ibid., p. 78). The dirt of the East can be understood here as a metaphor in two different meanings. The first meaning is the comparison of the dirt of the East to the Soviet Union (to the Eastern Block). Not only in this novel, but in several of his works, the author portrays the period of socialism between 1948 and 1989 negatively, sometimes even ridiculing it. For example, his novel *The Camp of Fallen Women* (1993, Tábor padlých žien) is a grotesque of socialism, in which he ridicules the efforts of the socialist regime to re-educate prostitutes from Bratislava in the Forced Labor Camp in Nováky. The event around the character of the photographer Jakub from the novel *The Land of Forgetting*, who was forced to photograph a state contract connected with the humiliation of a Jew-merchant, is also an allusion to the dirt of the Soviet Union: "He is looking at a thin stream of water. How clean it is, he thinks. He remembers Erna's amazement at how she let the water flow between her fingers. He remembers what she said about the filthy beautiful world. He admitted that it was true. And now he will add his work to this filth? Will he give the dirt another face, another defiled Jewish face?" (ibid., p. 205). The quote above also suggests the second meaning of the metaphor of the East dirt, and thus the persistent anti-Semitism in post-war Czechoslovakia or in the whole Eastern Block. One of the main themes of the novel is xenophobia, the persistent negative stereotyping of Jews as enemies of individuals feared for their property they had forcibly confiscated from the Jews during the war, but also as enemies of the new system of government. After photographing the humiliation of a Jewish businessman, Jakub feels dirty, and his feeling of dirt here is directly related to xenophobia towards Jews, and he regrets that he took part in something like this: "Jakub only rinses his hands in the water, he does not want to soil it with his face" (ibid., p. 205).

4.4 Motif of The Lost Generation

Literary direction, or rather the avant-garde group of The Lost Generation, which was formed around the American writer Gertrude Stein, appears in world literature after World War I. and its representatives are famous names such as Ernest Hemingway, John Doss Passos, John Steinback, James Joyce, Marcel Proust and others. The prose writers of The Lost Generation reflect the pessimistic feelings of the war-torn young

generation which returned from the battlefields of World War I. and could not integrate into society, because their lives were interrupted at a sensitive young age. From this point of view, it is obvious that their works are full of the existential motifs of a person excluded from society under the influence of lived horrors, the motifs for seeking the meaning of life in the post-war period. The following feelings are very aptly summarized in the end of the novel *All Quiet on the Western Front* (1929, Im Westen nichts Neues) by Erich Maria Remarque: "We will no longer be able to come to life! They will not even understand us - because the older generation, which survived these years with us, already had its existence and vocation, and will now return to the old places where it will forget about the war. Behind us grows a younger generation, similar to us as we were. It will be foreign to us and will move us to the background. We are useless to ourselves; we will grow, some will adapt, others will succumb, and many will be clueless. The years will melt away and we will eventually perish" (Remarque, 1966, pp. 163-164).

Feelings of The Lost Generation are very affirmative with feelings of guilt for their own survival, the futility of the survival of corrupt people whose lives are distorted after the horrors of war - the motif, which was captured in the novel *The Death Is Called Engelchen* by Ladislav Mňačko. Unlike Marta and Volod'ia from this novel, who have to deal with their unnecessary existence after the war, however, the fate of Paul Bräumer from the novel *All Quiet on the Western Front* ends happily for him, he dies in October 1918, "one day, when the front was so calm and quiet that the message from the battlefield was limited to the sentence: *All Quiet on the Western Front...*" (ibid., p. 164). Death was a redemption for him, freeing him from the suffering of The Lost Generation. The author demonstrates this fact in Paul's posthumous facial expression: "He had such a calm expression on his face as if he were almost satisfied that it ended like this" (ibid.).

The motif of The Lost Generation also got into literature in the 1960s. Czech literature speaks about its second wave, which is thematically related to World War II. In the post-war period, people had to deal with similar feelings, regardless of whether they were involved in fighting in the military, in partisan groups, or as Jews and other racially and politically persecuted people who were interned in concentration camps and fought for their existence. The motif of difficult coping with the experienced traumas, psychological and existential problems in reintegrating into postwar life are an important part of the literature about the Holocaust, whether the memories captured in the memoir literature of Jewish authors or fiction and non-fiction literature of non-Jewish authors.

The attitudes of the lost generation depicted in literary works can be compared with the testimony of Yehuda Lahav, which was captured by Anton Baláž in the non-fiction *The Transports of Hope*. The life of a young student Yehuda was affected by World War II. and the racial persecution of the Jews. After the war, he returned to study, but returning was not easy. He was marked by the weight of events, the experience of the Holocaust made him a premature adult compared to his peers, because "they were 15-year-old children and we were 15-year-old adults. We lived mentally in completely different worlds" (Baláž, 2010, p. 55). In his experience there is an explicit parallel with the fate of The Lost Generation. There is only one difference: while the war made young students - soldiers (fighting in World War I.) people raw and superficial for the experience with killing; students - Jews who faced the Holocaust experienced their trauma from the horror committed on members of their own family. Their suffering stemmed from fear of deportations, constant concealment and fear of betraying their Jewish origins. For both, however, the war meant the end of their joyful childhood and adolescence (Adamická, 2019, p. 77).

These motifs also got into the memoirs of two Slovak Jews, the authors of the Auschwitz Protocol, Rudolf Vrba (Valter Rosenberg) and Jozef Lánik (Alfred Wetzler) who escaped from Auschwitz. In the book *What Dante Did Not See*, Jozef Lánik recalls his first contact with freedom with certain negative

emotions or even fears about his own future. Among other things, they initially encountered distrust of their report, which bore witness to the atrocities against Jews committed in Auschwitz: "In the whole three months, he did not meet a person who would accept the rumors of mass murder in concentration camps without reservations, without a remark about propaganda" (Lánik, 1989, p. 254). At the same time, they were haunted by a certain exclusion from society - they could not be included in normal life, they were too distant from other people's lives. It could be said: they did not understand the world and the world did not understand them. "He's still a number, he can't (and maybe doesn't even know anymore) be laughing and having fun carefree. And what would he talk to them about? Maybe he would start talking. And they would not believe" (Lánik, 1989, p. 260).

Rudolf Vrba mentions the first moments after his escape from Auschwitz and his arrival in Slovakia, similarly to Jozef Lánik, with whom he "doubted whether we would be happy again or whether Auschwitz, the scene of so many murders, was immortal and will live in our minds until we will not die [...] In these dark moments, we were afraid that we might never be able to live a normal life again" (Vrba - Bestic, 2015, p. 323).

In a slightly different form, the motif of The Lost Generation also got into Peter Karvaš's prose *The Old Man and Fate* from the collection *The Night in My City*. In this case, it is not directly about capturing the nonsense or uselessness of one's own existence in the post-war period, but about the motif of losing childhood and adolescence under the influence of fear for one's life in the period of persecution of Jews. Marianka, the daughter of a Jewish watchmaker, was expelled from school because of her background, and by doing so, she distanced herself from her peers. At the same time, with the loss of her childhood, the watchmaker seemed to have lost his daughter, because "her adolescence with squeaky braids and the smell of student's books, everything was far in the past, in another world" (Karvaš, 1998, p. 81). Klára Jarunková also writes about the lost childhood in her novel *The Black Solstice*. The story of the novel is about an effort to save the childhood of the youngest daughter of mother Malatincová. Unlike Marianka's father from Karvaš's prose, mother Malatincová does not take this fact so pessimistically - Zuzka is reborn from a sick child into a strong adult woman, "into a wise and bold mother's support" (Jarunková, 1998, p. 118). It should be added, that while Marianka becomes a premature adult under the influence of the persecution of Jews, Zuzka experiences war from the opposite side - her family is non-Jewish, but during the war they hide Jews in their flat in Banská Bystrica, in the town which was the center of Slovak National Uprising. The panic of Zuzka does not stem from fear of deportations, but from betrayal and subsequent persecution.

The theme of the lost childhood was also marginally included in Rudolf Jašík's novel *St. Elizabeth's Square*. The young Jew Eva loses her adolescence after she starts living with Igor. She doesn't feel naturally in the role of Igor's partner, with whom she shares a bed. Their young, innocent love was hastened, though Eva was not identified with it. The deportation of the Jews made them prematurely adults: "They forgot about the tower, they both forgot about it: 'We forgot about you, a sign of our love, mother-guardian! And is it because we stopped being children? Soon and so suddenly. Why did we stop being children? Every night when I make the bed, my hands shake and it seems to me that I am doing something forbidden'" (Jašík, 1962, p. 215). In this novel, as in previous works, there is expressed a rapid shift in life from childhood to adulthood over a few days under the influence of adverse circumstances. The only difference is in the range of characters affected by this aspect. Jašík goes further - the motif of premature adulthood does not only concern the Jew Eva, but also the non-Jewish character Igor, who thus seems to connect his fate with the fate of the Jews.

5 Conclusion

Works of Slovak literature depicting the issue of the Jewish minority and the Holocaust during World War II. are a valuable testimony reflecting the conditions of society in relation to Jews. There is also evidence of existential problems experienced by Jews during internment in concentration camps or escape attempts, as well as in the post-war period as a result of horrors they had experienced. And these difficulties created an imaginary obstacle to their efforts to reintegrate into society. There is no doubt that existential motifs are dominant in the memoir literature of the surviving Jews, who wanted to testify through literature and thus preserve the Holocaust for future generations. However, they got into the fiction of authors of non-Jewish origin depicting the machinery of the mass murder of Jews. It could be said that in this respect there is a very strong parallel between the memoirs of Jewish authors and the fiction of non-Jewish authors. This aspect is more evident in those works that were written on the basis of the personal testimonies of the surviving Jews and thus take on the character of memoirs.

However, it is not possible to generalize and state on the basis of a comparison of selected works that the same or at least similar existential motives occur in all works of Slovak literature depicting the Holocaust and the theme of Judaism. An example is Ladislav Grosman's short story *The Bride* (1968, *Nevesta*), which, although thematically focuses on the persecution of Jews during World War II., does not portray the existential motives we have described to such an extent. The plot of the novel is carried in a light-hearted spirit with a certain amount of humor. Only at the end of the story *Lízinka*, hidden under straw in a barn, asks herself existential questions: "What did she do, what is her fault? Is this a shelter for a person who has ceased to be human for the world and for reasons that cannot be understood?" (Grosman, 2017, p. 53). The author summed up in one sentence the degradation of the human dignity of the Jews during racial persecution, but on this basis it is not possible to claim about dominant existential motives as an important component of narration.

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RESEARCH OF A SOCIONOMY SPECIALISTS' SOCIAL ACTIVITY IN THE SYSTEM OF MODERN HUMANITARIAN KNOWLEDGE

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Abstract: The paper examines the issue of future specialists' social activity in the light of contemporary challenges when the role of socionomic professions is growing. The author determines the factors influencing the formation and development of the individual social activity in broad contexts of changes which are taking place in the social environment; also the author determines the factors influencing a variety of activities where the interests of each person and the interests of social development are closely intertwined. The research identifies and substantiates methodological tools demonstrating how to increase the effectiveness of the efforts undertaken by today's domestic pedagogical education to help the individual solve urgent social problems of the socionomic sphere by improving the system of professional education and specialists' social training in all types of learning and educational processes.

Keywords: personal formation, socionomy specialists, social activity, social action, social actor, technologization of educational processes, higher education, educational system.

1 Introduction

The renewal of democratic public space in today's developed communities demonstrates knowledge sharing that supports such values of the democratic society as openness, trust, exchange and cooperation – "it is a source of autonomy and a spirit of initiative, it appeals to the active participation of everyone in the life of society" (10). The social activity of the individual is seen as a factor of humanitarian security in knowledge societies, since knowledge societies are societies whose source of development is their own diversity and their own capacities; it is the society where updated higher education systems should contribute not only to the creation, dissemination and application of knowledge, but also to the formation of civic position (10). The social demand for the development of students' social activity is enshrined in a number of international documents. According to Article 2 of the *World Declaration on Higher Education for the Twenty-First Century: Vision and Action*, at the recent stage of social development the tasks and functions of higher education are to help identify and solve problems affecting the well-being of communities. The document also sets a clear task: higher education institutions, their staff and students should: be able to use their intellectual potential and their moral authority to protect and actively disseminate universally recognized values, including peace, justice, freedom, equality and solidarity proclaimed in the UNESCO Statute 4. According to the *Memorandum on Lifelong Learning* of the European Union, social skills such as self-confidence, responsibility for one's own destiny, ability to take risks are also becoming more important in today's world. (12)

At the same time, in the modern world the professionalization of each individual becomes a form of inclusion in the socio-economic processes, a means of development, self-realization and a source of livelihood. For society the professionalization of its members is, first and foremost, a source of cultural and material wealth, without which social development is impossible. In the light of today's challenges, the role of socionomic professions – a variety of activities where the interests of each person and the interests of social development are closely intertwined – is growing. It significantly enhances the role of socionomy specialists and indicates the need to improve the system of professional education for their social training in all types of learning and educational processes. Therefore, the task of pedagogical education and humanities is to encourage the individual to take part in the solution of urgent social problems.

2 Research results and discussions

2.1 Research on the social activity of the individual in philosophical and educational dimension

Today's professional education is facing an urgent problem how to combine the processes of professionalization and socialization, the humanitarian content of curricula for socionomy specialists and the technologization of educational processes. Therefore, Ukrainian pedagogy and education have to update the educational content, introduce innovative forms, methods and person-oriented educational technologies that will ensure the achievement of qualitative results in the formation of man by humanistic values, meaningful orientations, spiritual growth, ability for self-improvement, development of personal potential and self-realization. (17) Since modern pedagogical methodology goes beyond the traditional scientific knowledge and embraces the entire socio-cultural world with its multiple problems, multidisciplinary nature, specific historical time and space, experts note certain difficulties connected with taking into account the individual differences in the development of social activity skills when the competence approach is used in the system of modern professional education. This problem is particularly important with regard to socionomy specialists' training when lack of knowledge and practical skills often have a situational and extremely negative impact on the results of professional activity. In the context of the above, it is advisable to analyze the notions of social activity in the scientific environment.

In the philosophical encyclopedic dictionary, "activity" (from Latin *activus* – effective, practical) is interpreted as one of the characteristic features of the lifestyle of the social actor (personality, social group, historical community, society as a whole), and this activity reflects the measure (level) of his/her abilities, knowledge, skills, aspirations, concentration of volitional, creative efforts to realize urgent needs, interests, goals, and ideals. The activity is carried out in individual, group, collective, mass, labour, political, organizational, managerial, cultural, leisure and other life forms of society. As an antipode of social passivity, it is manifested in the activities of political and public organizations, movements, during the implementation of social initiatives, etc. Due to its heterogeneity, social activity can be used by different social forces and lead to both positive and negative consequences. As a scientific category, it is used in various fields of humanitarian cognition to study the dynamics of historical events, social problems of the individual and society, group behaviour, the political life of society. (1)

A similar definition is given in the Encyclopedia of Modern Ukraine, according to which "social activity" is a characteristic of the lifestyle of the social actor (individual, group) which consciously directs his/her activity and behaviour towards the change of the social environment, conditions, institutions according to the needs, interests, goals, ideals, or, on the contrary, towards preservation of the existing state of things, putting a brake on changes and development; it means identifying social initiatives, participating in the solution of relevant social problems, interaction with other social actors. "Social activity" is a factor which helps to realize the social actor's activity potential, his/her culture, skills, knowledge, needs, interests, aspirations, social activity. Since there are diverse forms of individual, group, mass kinds of activity and behaviour among people, "social activity" is characterized by multiple specific manifestations. The types of social activity include professional-labour, civil-political, moral, managerial, leisure, verbal ones. Procedurally, social activity is characterized as creative, productive, or non-creative, reproductive while acquiring various social orientations and meanings.

According to a number of other sources, within the philosophical approach social activity is studied in social interaction – as "the process where social objects make a direct or indirect influence on each other, which is determined by and manifested in social interaction, and where interacting parties are connected by cyclic causal dependence. The emergence and development of social activity is associated with the mutual participation of interacting

objects in a complex, mobile network of social relations with a variety of ways to implement common activities and social solidarity". (26)

In the field of philosophy, modern Ukrainian researchers emphasize the spiritual component of the social activity of the individual. They believe it is the ability to assert his/her vital autonomy and willingness in order to defend his/her ideological positions whose core is the desire for justice which should dominate in the process of spiritual and moral upbringing, and which means overcoming egoism. The preconditions of social activity are such personal qualities as group identity and harmony, reasonable group conformism, solidarity and care. (3) The purpose of upbringing is generally considered to be the formation of personality according to an existing model that is correlated with a certain historical period of society development. Its purpose is a real, socially sustainable personality, capable for a significant contribution to social development in the new socio-economic conditions. Among the structural components of the social activity of the individual, researchers most often point out determination, perseverance, activity, curiosity, independence, sociability, collectivism, mutual assistance, perception of something new, creativity and responsibility. The integrative, key characteristics of a socially active individual are initiative and responsibility.

One of the most prominent features of our time is the increased activity of youth in all spheres of social life. However, the expansion of rights and freedoms is organically linked to the boost of everybody's responsibility towards society and the observance of civic duty. (30) S. Poleiev in his work "*Society of knowledge as an anthropological situation*" says that in developed economies, due to the considerable decrease of the share of population engaged in the field of production and the gradual predominance of the employed in the non-production sphere – service, education, management, etc. – life situations are mostly turning into cognitive situations in the modern world. In the author's opinion, this process is closely related to changes in the structure and nature of human labour. (23) Philosophical research also points to significant transformations in the nature and forms "knowledge" exists in the era of informatization when "the main cultural quality of the individual is mobility..., ... and the way to constitute the mobility is his/her involvement in information networks. It puts forward the fundamental requirement for the modern educational system to be transformed, which means that cultural, social, professional, psychological mobility is transformed into the main purpose of higher education and, therefore, becomes the main achievement of the university graduate. In turn, a conflict arises between the fundamental and current mission of university". (23) Since the main purpose of education is the socialization of the individual, and the task of education is the theoretical and practical realization of socialization goals, there is also an instrumental presentation (formation) of a specialist's social activity through the set of social norms and standards as a means of retaining future members of community within this community's influence, within its boundaries. (2) On the one hand, the latter raises the problem of an inevitable restriction of this process, which is permissible for the certain forms of functioning and, on the other hand, it has quite successful goals to achieve. Since it is necessary to create such an atmosphere in pedagogy which helps realize its functions, and which could motivate the educational process by internal motives to serve the society or oneself, in the context of the social activity development it is necessary to make a turn: to reduce external coercion and to strengthen the conviction of the people who study. (2) At the same time, it is important that recognition of spiritual relations as important components of the social structure of society is simultaneously the recognition of knowledge about these relations in the structure of social knowledge and cognition. (27)

Therefore, at the level of methodological understanding of the social activity development, the position of the social actor becomes important while the social reality itself is implicitly understood as a result of objectifications of the social actor's consciousness. At the level of methodological analysis the

research process is directed at the production of objectified knowledge, while at the level of methodological understanding the emphasis shifts from the process of obtaining knowledge to its use. (27) Therefore, quite important is A. Furman's opinion that modern pedagogical methodology should go beyond the limits of purely scientific knowledge, embracing the whole socio-cultural world with its multiple problems, abundance of subjects, in certain historical time and space, because it means that "... it [pedagogical methodology] is concerned about the way people act. On the one hand, they act according to the laws of sociality (compliance with form), on the other – according to the cultural laws or content". Hence, at the reflective level it is advisable to involve certain approaches in the social activity of future specialists. These approaches should take into account the boundary principles of different levels of methodological analysis – awareness of social activity as an action, its purpose and tasks, forms and means, methods of implementation and results; awareness of social activity as the reproduction (learning) of a particular activity together with the transmission of cultural norms; optimization or rationalization of activity, how it can be best implemented under certain conditions and in the shortest possible time; awareness of social activity as creation of new activities which are seen as reality (27).

With regard to the socio-economic approach, which, in our opinion, requires more detailed consideration while studying the social activity of sociology specialists, we point out that in most research works on socio-economics the social activity of the specialist is treated as a condition and property of the personality, associated with the ability of the individual to provide personal financial well-being with available resources, abilities, initiative in decision-making, creative activity. In the context of the economic approach, it is emphasized that the social activity of the individual depends on both external (development of production, organization of labour activity, support of competition, etc.), and internal conditions (desire to meet personal needs, mobility, creative incomes, etc.).

2.2 The social activity of the individual in the context of socio-psychological and sociological approaches

Within the socio-psychological approach (K. Alukhanova, A. Bandura, A. Maslow, etc.), the social activity of the individual is interpreted as a property of the individual psyche, a feature of its psychological traits (volitional qualities, giftedness, intellectual abilities, certain behavioral patterns, etc.). In the context of the psychological approach, the factors of the social activity of the individual are seen as volitional qualities and an individual talent. Special attention is given to the specificity of the social activity of the individual through the analysis of the possibility for him/her to adapt successfully to environmental conditions, to regulate certain forms of behaviour, to find the meaning of life, to develop creative skills, etc.

The activity aspects of the socio-psychological approach are believed to be very important for our research. They are defined in V. Khaikin's work "*Activity (characteristics and development)*" where the author states that social activity is considered, first of all, as "the personal need to change or maintain the basics of human life in accordance with his/her worldview or value orientations", that is, activity is seen as a special property of the person who is the actor. This activity ensures the functioning of the individual in the social world and his/her personal development, since the activity in its broadest sense detects the subject, purpose, motive; it suggests the possibility of project-making, implements various forms of individual interaction, ensuring their development, self-improvement and creation of the proper environment; it integrates the human features of activity and realizes the human activity itself. (28)

The process of defining the parameters of the specialist (development of the specialist's psychological models) in different areas of life and the process of tracking the major changes which are recorded by these parameters during the professional growth allowed us to understand the importance of

the self-development mechanism in the formation of personality, since the involution of personal self-development can lead to deformation and degradation of personality. The integral characteristic of the actual moment of the personal self-development is most often seen as the results of socio-cultural and professional activities and as the level of competence conformity to personal requirements which are made towards the sphere of activity. However, even in this case the person is rated as a "function" and it is not taken into account that the peak of the personal self-development does not necessarily coincide with the peak of the personal activity manifestations.

In our case, it is social activity that becomes a means of gaining social competences, and nearly all researchers see eye to eye on the following: though it is impossible to achieve a high level of social competence without the development of special abilities (which are adequate to specific activity in the form and content), without knowledge and skills, but the most important condition to achieve the necessary level of competence is also the development of general abilities, universal human values, and, above all, the moral education of personality. (6)

In turn, some integrated life narratives, including social activity, can be a source of information for establishing personal identity, understanding your own place in the world and contributing your own activity into it. (35) However, the nature of the relationship between the personal characteristics and criteria of successful activity continues to be the focus of research, since the development of a competent personality is only possible if professionalism and personal development are mutually developed.

Therefore, in our opinion, the ideas of subjective effectiveness and confidence in subjective effectiveness (31, 36) are central to the social-cognitive approach to the analysis of personality in the research on social activity. Thus, social competence as a psychological and personal formation can be characterized not so much by knowledge, skills, professionally significant qualities, but by the ability and to some extent the art of setting and solving life tasks (including professional ones), by special understanding of the reality in general or certain (also difficult) situations in the activity. Both culture and characteristics of social environment influence the adaptive mechanisms and integrated life narratives of personality. Consequently, the characteristics of personality adaptation in the professional environment relate to the so-called contextualized goals, values, coping strategies and patterns of behaviour associated with interaction with other people.

Within the sociological approach (P. Bourdieu, M. Weber, A. Giddens, I. Hoffman, T. Parsons, J. Habermas, M. Horkheimer, etc.), social activity is interpreted as a specific type of activity of the individual, oriented to the individual participation in the solution of current social problems. In the context of our work, some sociological approaches to human activity are of considerable interest, in particular J. Habermas' theory of communicative action, A. Giddens' theory of structuration, and P. Bourdieu's constructivist structuralism. The concept of J. Habermas is based on the assumption that society and all relations in society form two components – the purposeful rational action and communicative action. The purposeful rational action ensures the basic functions and reproduction of society; it incorporates formal norms, rules, regulations. The main task of this component is to ensure the well-being and security of individuals. According to the concept, in contrast to the pragmatic purposeful rational, there is the communicative action that determines the transfer of knowledge, socialization of personality, interaction between people, and self-development of the individual.

The development of civilization causes the change of the purposeful rational action (system) to the communicative action (living world). However, according to J. Habermas, although human activity is conditioned by the ability to perform the communicative action, in the modern world the activity of the individual is being constantly reduced due to the fact that the

living world is dominated by the standards and norms of the system.

The scrutiny of the evolution of the sociological approaches, which were put forward by different scientific schools, the theoretical directions and research works by V. Pylypenko and O. Honcharuk stress on the necessity to do the research by branch social sciences. Firstly, it is connected with radical changes in the modern reality and with the necessity to clarify the factors helping to increase the adaptive possibilities of members of the professional communities at certain stages of social development. (20) According to A. Ruchka, another important factor is the analysis of social competence as a resource of life activity at the individual-personal level of human development, covering the personal field of formation and development of the social subjectivity of the individual, in particular the professional environment and the specific educational institution where professional education is received. (24)

The findings of thorough sociological surveys which are studying innovative dimensions of Ukraine's social development make it possible to consider the specialist's social competence as a well-established value orientation of modern society members, which includes different levels and forms of interaction between the social and individual sides in personality. The results of O. Zlobina's work where she studied personality as an actor of social changes through the prism of "social subjectivity" allow us to further classify the properties of the actor (individual, group) which are manifested in his/her activity". (9) Since, according to this approach, a person becomes an active doer only when he/she starts to influence the situation and transform it in a certain way, so the realization of the individual active position is determined by the presence of adequate mechanisms for its social formation.

Recent sociological research state a number of contradictions in the system of national education which significantly worsen its functioning as an important social institution. I. Nechytailo defines this contradiction as inconsistency of the education results with the expectations of the individual, state, society. (19) Since education is studied on a large scale – as a social institution, as a process of social interaction, as a result of the future specialist's activity, as well as of specific social communities and society as a whole, all educational goals are narrowed down to three basic approaches:

1. The first approach emphasizes the procedural nature of education; its purpose is to translate knowledge and experience from generation to generation.
2. From the point of view of the second approach, the purpose of education is not in the process itself, but in its result which is the formation of a complete personality that acts for the benefit of society.
3. Within the third approach, the purpose of education is personality which is self-sufficient, comprehensively developed, prepared for the reproductive activity, preservation, development and multiplication of the material and spiritual culture of society.

The third approach, overcoming the limitations of the first one (the unspecified purpose) and the second one (domination of the social over the personal), combines the two vectors and emphasizes the need for the individual not only to adapt to existing social realities, but also to master the means of their transformation while being an active doer and the main conductor of social change. Also, this approach lays great stress on the formation of such personality, and rightly affirms the interconnection between the educational outcomes and the peculiarities of the educational processes as components of the socialization process.

Therefore, it is methodologically justified that researchers want to specify the effects of systems (subsystems of the educational environment) on the formation of personality in several subject fields in order to consider how the functions of the educational

environment are related to goal setting. The sociological position that suggests integrating the whole set of educational functions into several ones seems to be constructive. Its parameters of goal setting are clearly defined and of the greatest importance for the processes of life support, reproduction and constructive social change:

- The function of culture creation;
- The function of social structure reproduction;
- The function of ensuring the principle of social justice in the creation of culture and social structure. (19)

2.3 The social activity of the future socionomy specialists: principles and goal setting

Theoretical and methodological approaches of modern pedagogical science, which study the social activity of socionomy specialists and which are based on the above and many other philosophical, social-psychological, sociological and pedagogical concepts, consider the social activity as specific activity, determined by the process of upbringing, creation of conditions for self-development, successful mastering of social norms, values, etc. The components of social activity include individual characteristics and external conditions of the individual (e.g., family well-being, educational institution, social environment, influence of the teacher, etc.).

The overwhelming majority of the research on theoretical and methodological foundations that deal with pedagogical aspects of the development and formation of social activity are based on the definition of the social activity phenomenon as an "active link between human and social environment which, within the pedagogical system, appears as a form providing social growth of its actors (students) according to the social responsibilities and experience that the student acquires in the process of receiving higher professional education". (13) During the analysis of the content, structure and functions of the social activity that is characteristic of the student environment at HEIs, it was found out that the development of self-organization and social subjectivity, which focuses on the student's creating the image of the desired professional future while studying at HEI, requires forecasting actual changes, strategic planning and involvement of the actor into the transformation of himself/herself and the environment according to the following pedagogical principles:

- The principle of anticipatory reflection and transformative orientation (which requires prediction of actual change, strategic planning and inclusion of the actor in the transformation of oneself and environment);
- The principle of autonomy (which indicates the need to give the actors of the educational process the opportunity, regardless of the existing business relations and other actors; to develop their autonomous structure of activity and put it into practice);
- The principle of mutual enrichment in cooperation (which means that development of university students' social activity in the process of integration between formal and non-formal education should be built on the basis of mutual respect for the interests of all actors, harmonization of their priorities and exchange of contributions between them);
- The principle of co-evolution (which means compatibility, consistency, interdependence of changes in the student's social activity in accordance with the actual tasks of personal, social and professional development, as well as changes in the environment, since the student is active while interacting with it);
- The principle of integration of personal and social priorities (which means that the development of the student's social activity must meet the requirements, norms, relationships, priorities of the society and be guided by value, uniqueness of personality; it must promote rapprochement, convergence of personal and social priorities both in the environment and in the minds of its actors);

- The principle of constructive subjectivity (which means that in the educational environment of a higher education institution, a student and a teacher are actors who are given the freedom of choice, self-determination, self-regulation, self-organization);
- The principle of binary cyclicity (which makes sure that the development of the student's social activity and his/her pedagogical support are realized as a change of cycles);
- The principle of productivity growth (this approach means that with each new cycle of the social activity development, one must strive for increasing productivity in the interaction among the actors of the educational environment);
- The principle of feedback (which demands the regular study of the results demonstrating the development of students' social activity, the opinions of the actors of the educational process in the process of monitoring). (29)

Based on the results of the above-mentioned theoretical and methodological foundations and approaches, and summarizing the results of our research on the social activity of future socionomy specialists, it should be noted that social activity differs from other types of activity:

- By the environment of manifestation and development;
- By the process it determines and resulting from which it can develop – social interaction which represents the system of social relations of the individual with the environment in the form of activity, cognition, communication;
- By the nature of the activity where the socially significant social problems are addressed, as well as the transformation of the actor, social environment and oneself;
- By a focus on reconciling personal and social interests.

At this, the essential characteristics of the social activity are: self-determination (the source of social activity, the needs of the individual, the internal conscious urge conditioned by the "desired future" and meaningful for the individual); involvement in social interaction (social activity is the result of the individual's awareness of the relationship with society and his/her ways of interaction with it. All this gives a possibility to fulfill the potential of the individual while purposefully transforming himself/herself and the environment; social activity manifests itself in the form of productive activity, communication, cognition); pro-social orientation of activity development for the benefit of society and the individual while following cultural values, social norms, laws and moral ideals.

These characteristics allow us to consider the social activity of the individual as a state and as an integrative property of the person (social group) that is determined by the interaction with the social environment in the process of cognition and transformation of oneself and society in accordance with the tasks of social development and personal self-development. In addition to these characteristics, essential in the manifestation of social activity (not relating to previous types of activity) is its orientation. The choice of the social activity orientation made by the actor is determined by his/her awareness of social phenomena and their interconnection, the dominant values in the society, and by understanding their social significance. It is the pro-social orientation of human activity that is the transformation of the environment for the benefit of society and the individual, which is the main essential characteristic of social activity. Social activity is manifested in the voluntary and conscious desire of the individual to act, to realize oneself for the benefit of society, to accept social tasks as one's own and to be involved in their solution.

If the psychological and pedagogical aspects of the personality formation and development are related to his/her own efforts and ways of self-determination and self-realization, then the substantive part of the social demand for the desired orientation of the future specialist's social activity is defined in normative acts. Therefore, at this stage of research, we should take into

account the need to “translate” general universal concepts into a local framework of understanding, and to consider the further multidisciplinary developments undertaken in the context of a competence approach to the research.

The Future Work Skills 2020 research states that leading positions in the ranking of the most important skills for achieving success in professional activity in the near future are unconditionally attributed to the socialization of the individual and the level of his/her individual social consciousness (in fact, social competences and social activity), namely:

- Understanding the meaning of activity as a skill critical to decision-making;
- Developing social intelligence as a factor of competitive advantage and building successful cooperation and professional relationships with others;
- Ability to think outside the box and rules, adaptive thinking as a means of “situational adaptability”;
- Ability to respond to unique and unexpected circumstances;
- Development of intercultural competence as an adaptive factor in the context of globalization and the driving force of innovations. (32)

Among the five key competences adopted by the Council of Europe, the social competence holds one of the leading positions along with intercultural, multimedia, communication and self-development competences. (33, 34) Higher education standard, which is based on the Law of Ukraine of 01.07.2014 No 1556 VII “On Higher Education”, (7) Law of Ukraine of 05.09.2017 “On Education”, (8) a number of resolutions of the Cabinet of Ministers, (21, 22) and other regulations establishes professional requirements for the level of knowledge in order to develop the ability to apply knowledge in the professional environment.

3 Conclusions

According to the results of the research, we found out that social activity as a state is a qualitative characteristic demonstrating the interaction of the actor with the social environment at a particular time. As an integrative characteristic, social activity demonstrates integrity, originality and connections between the properties of a particular actor which determine its manifestation. At this, the state and the properties are interrelated: the state of social activity is conditioned by internal properties and external environment; by contrast only certain properties of social activity are actualized at a certain moment while the others make up its potential. (29)

According to the educational standards of professional competences, the result of the professional training of the modern student – the future sociometry specialist is not only a high level of knowledge and practical skills, but also the ability to independently solve problems, to take an active part in building a new Ukrainian society while achieving a successful self-fulfillment in social life. According to the Competency Classification in the National Qualifications Framework (NQF), students should gain the mandatory knowledge competences, practical skills, general, social and communication competences; competences defined by the current standard as “Autonomy and Responsibility”.

According to the normative documents, there are the compulsory practical skills for HEIs students that are formulated for bachelors who are studying in specialty 231 “Social work” and that are defined by current standard, (14) for those in specialty 012 “Preschool education” by current standard. (16) There are competences which a HEI graduate must gain in the field of preschool education for the development, education and upbringing of early preschoolers, as well as in specialty 053 “Psychology” approved by current Standard. (15) However, a large majority of these competences belong to the characteristics that a student cannot gain while remaining the inactive actor in the educational process.

In this regard, one of the most important tasks of the modern higher education institution is the development of the student’s

social activity. Since the effective implementation of the socio-professional functions and roles of the future specialist depends on the social activity, it is pedagogically important to determine the conditions which will help to make the integration of the structural components of the future sociometry specialist’s social activity the most effective during the period of receiving education. Thus, the next stage of our research is an enlargement of the interdisciplinary study of the current standards of social competences for future sociometry specialists. This study will let us identify the effective qualitative and quantitative parameters in order to measure and assess the level of the social activity development within the professional groups under study.

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Primary Paper Section: A

Secondary Paper Section: AM, AN, AB

HOW TO TRAIN TEACHERS TO SUPPORT PUPILS' ORIENTATION FOR TECHNICAL STUDY PROGRAMS

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Abstract: The paper presents description of the conceptual analysis of a lesson, so-called AAA methodology - as a mean through which a teacher's professional competences and teaching mastery can be developed, independently on his/her majors, consequently this methodology is applied on the analysis of a lesson of the subject technology, which is a compulsory subject taught at upper level of primary schools in Slovakia and there is point out how a training in the use of this methodology can influence the ability of teachers to make teaching of their subject to be more attractive and interesting for their pupils..

Keywords: AAA methodology, conceptual analysis of a lesson, teaching mastery, teacher's professional competences, teaching technology, technical education, pupils=professional orientation.

1 Introduction

In the concept of the National Program for the Development of Upbringing and Education *Learning Slovakia* (MŠVVaŠ, 2017), great attention is paid to the need to reconcile the interconnection of vocational education provided by secondary vocational schools with the requirements of employers. The connection of vocational training with the implementation of technical education and the related professional orientation of pupils in primary schools remains out of the focus. At the same time, the lack of interest of young people in the study of technical fields does not only concern the subsequent study of secondary school graduates, but it is already manifested in the primary school environment. The need to strengthen technical education at primary and secondary levels of education was also one of the key priorities of the state education policy of the Slovak Government. The key role in the process of directing the professional orientation of primary school pupils to technical fields is undoubtedly played by teachers of the subject of technology, which is included in the State Educational Program as a compulsory subject (ŠPÚ 2015a; ŠPÚ 2015b). In this context, the demand for the development of the professional competences and teacher mastery and the demand to introduce innovation in the teaching of the subject of technology are emphasized in relation to technology teachers.

However, the requirements of developing professional competences and pedagogical mastery and introducing innovations contributing to increasing the effectiveness of teaching in school practice do not only concern technology teachers. They are put on teachers of all subjects. This implies that the methodologies and practices set out below are concretized for developing the professional competences of technology teachers and introducing innovations in the teaching of technology, but the theoretical foundations of these methodologies and practices are applicable in the field of teaching any subject or focusing on teachers of all subjects (Hašková, 2019).

2 Theoretical basis of conceptual analysis of the lesson

One of the tools that can significantly help a teacher to develop his/her professional competencies and teaching mastery, and at the same time which s/he can use as a supportive tool for introducing innovation into his/her teaching practice, is a conceptual analysis of the lesson. This analysis is based on the methodological steps of the three As, which are *Annotation* - *Analysis* - *Alteration* (Janík et al., 2016).

Annotation is a description of the teaching process (lesson), or any of the learning situations that occurred within the lesson. It contains the most important information on the course of the described situation (lesson or part of it), which can include the objectives pursued, the topic covered, the specific content of teaching, activities carried out by the teacher, activities carried out by pupils, description of situations arising during these activities etc. Annotation provides (or should provide) a recipient (reader, evaluator, examiner, assessor himself) all information needed to create a picture of the situation as a complex whole and for the consequent analysis of the described teaching process or the learning situation (or for understanding of the analysis presented).

Analysis is an interpretation, justification, explanation of the learning process (learning situation) described in the annotation. It points out the strengths and weaknesses of the monitored (evaluated) situations with respect to the stated objectives and contents. During the analysis we ask about various aspects of the analysed lesson such as:

How can the context of the situation be characterized?
What is the teacher's intention? What does the teacher do?
What do pupils want? What do pupils do?
What did the teacher think of it / how did he see it / how did he "feel" it?
What did pupils think / how did they see it / how did they "feel" (understand) it?

The answers to these questions should contribute to increasing the specificity of the reflection process.

Alteration (possible alternatives) is focused on making proposals to change, modify, improve the carried out (monitored/assessed) teaching process (learning situation). Alteration does not mean a change in the "meaning" of the whole teaching process (learning situation), it is only a change of certain components of that whole, as a result of which the component may achieve a significantly different (higher) value (quality). An integral part of the alteration is the discussion, which is connected mainly with considering both the advantages and possible problems of the proposed alteration implementation into the practice (in the classroom).

From the theoretical point of view, the conceptual analysis of the lesson can be seen as an application of the Korthagen 5-component ALACT model of the ideal teacher self-reflection process (Fig. 1) with the components (Korthagen et al., 2001):

- 1 – Action,
- 2 – Looking back on the action,
- 3 – Awareness of essential aspects,
- 4 – Creating alternative methods of action,
- 5 - Trial (basically a new action, i.e. the de facto start of a new recursive cycle).

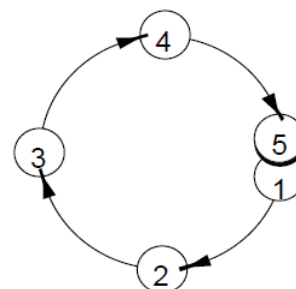


Figure 1. Schematic representation of the ALACT model [Source: Korthagen et al., 2001]

The questions raised in the analysis step of the presented three-step AAA analysis of the lesson are based on the questions presented in the ALACT model in relation to the reflection of the monitored action (looking back on the action).

3 Application of AAA methodology to teaching thematic unit *Technical materials and working procedures of their processing*

The following is presented an analysis of the lesson of technology realized in the 6th grade of elementary school (upper level of primary education, Boboňová et al., 2017). The following is presented an analysis of the lesson of technology realized in the 6th grade of elementary school (upper level of primary education). pilot schools of the national project *Supporting the professional orientation of primary school pupils to vocational education and training through the development of polytechnical education focused on the development of work skills and work with talents* (so-called *Workrooms* project), so the teaching took place in the workroom established at the school under this project. The content of the lesson was focused on teaching the thematic unit *Technical materials and working procedures for their processing*. The monitored lesson was attended by eight pupils (due to the maximum number of pupils prescribed in the workrooms for safety reasons). Each of the participating pupils had their own separate workplace (locksmith table with a vise). Duration of the lesson was 90 minutes (two 45-minute lessons combined in one block). The teacher was a student of the master's study program Teaching Technology.

3.1 Annotation

The content of the first part of the lesson was the presentation and explanation of the new subject matter. This was done in the form of a teacher's interpretations and practical demonstrations of particular working elemental operations. The pupils watched the explanation and demonstrations of the working elemental operations such as sawing, filing with a file, nail joining of individual parts of the product. The interpretation also included information on safety and health protection at work.

In the second part of the lesson, the teacher assigned pupils a task of making a model of a ship (Fig. 2), which technical documentation in the form of a technical drawing was made available to them (Fig. 3).

3.2 Analysis

The aims of the lesson were:

- to train hand saw, nail file and nail joining,
- to develop pupils' ability to work with technical documentation (to „read“ technical drawings),
- to develop pupils' ability to apply acquired knowledge and skills in the production of specific products,
- to acquaint pupils with the rules of safety and health protection during the particular working elemental operations (cutting, filing, skinning).

The aim of the product-specific part of the lesson (ship model) was to acquire the working methods of manual woodworking specified in the performance standard for the subject of technology and to apply these elemental operations in the construction of a specific product according to the technical drawing.

According to the performance standard for the subject of technology (ŠPÚ, 2015c), pupils should apply knowledge from the thematic unit *Graphic communication in technology* and from the thematic unit *Technical materials and working procedures of their processing* when creating a specific product (ship model). Specifically, it was about developing the ability of pupils:

- to determine the dimensions of the object (product) shown from the technical drawing,
- to assign dimensions to the displayed single object (product),
- to implement selected working methods of manual woodworking on the product according to the technical drawing.

In addition, according to the content standard of the subject of technology (ŠPÚ, 2015c), pupils had to develop further their ability related to the other thematic units (*Technical materials and working procedures of their processing*), namely

- to use the correct working procedures: measurement and contouring, cutting, filing, grinding, nailing.



Figure 2. Model of the ship

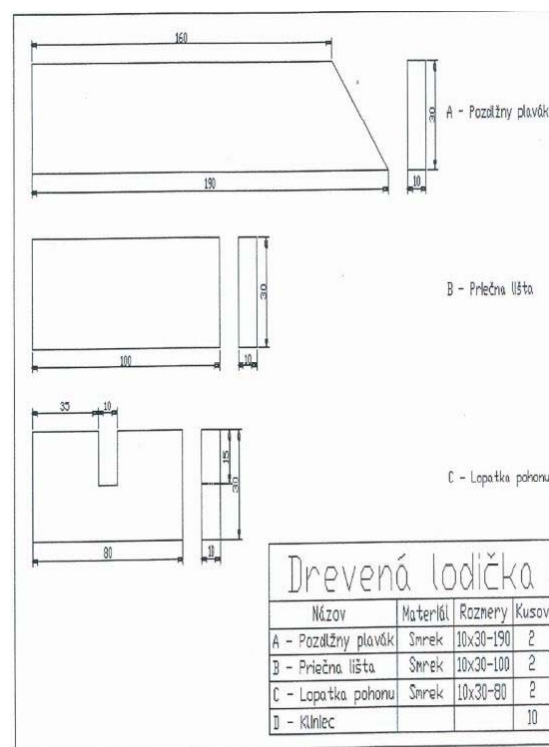


Figure 3. Technical drawing of the ship model

In the first part of the lesson, the pupils watched the teachers' interpretation and practical demonstrations of correct work with the saw and nail file and joining parts of the product with nails.

In the second part of the lesson the teacher made available to all pupils the technical documentation of the ship model (technical drawing) to be produced, the boat construction material (spruce wood with a cross-section of 10 x 30 mm), sandpaper, nails) and a sample product of the specified model. The pupils also had tools for measuring and contouring (steel gauge, angle).

In order to produce the model, the pupils gradually used all of the teachers' previously demonstrated work tools. The teaching activity of individual pupils was continuously monitored and guided and corrected by the way in which they performed the particular working elemental operations.

At the end of the lesson the teacher assessed the work of the pupils and compared the particular models produced by them.

The main problem of teaching technology is that this subject teaching should be practically oriented, for which it is necessary for schools to have the premises with the appropriate equipment, and the material and technical facilities necessary for its teaching (which is not common practice and in most of schools the teaching of the subject of technology is therefore of a theoretical nature). The school, where the evaluated student carried out his teaching practice, was equipped within the project *Workrooms* with all the essentials necessary for realization of practically oriented teaching of the subject of technology (hand saw, file set, locksmith hammer, meter, angle, miter box). The teacher used them to instruct the correct workflow of working with these tools and the pupils used them to work on the assignment.

In the beginning of the lesson there were no motivating factors and the teacher omitted to repeat basic information about processing of technical materials. At the same time, he could build on the knowledge determined by the educational standard of the subject of technology, where pupils are acquainted with the basic terminology of processing technical materials. As a result of these shortcomings, at the beginning of the lesson the pupils were only passive listeners.

During the explanation the teacher:

- pointed out the correct use of the gauge and the angle (correctly placing the gauge on the material, indicating the necessary dimension at one point, transferring the appropriate dimension along the entire cross section using the angle),
- explained the data contained in the technical drawing (developing the reading ability of the technical drawing and the ability to determine the particular dimensions of the parts as well as developing the pupils' spatial imagination, i.e. their ability to imagine how the product should ultimately look),
- explained the correct technological procedure for sawing using a miter saw (correct and safe attitude when sawing), paying particular attention to the correct position at the work table (or the material for right-handed and left-handed pupils),
- clarified the bonding of the individual parts of the product to be made with the nails (correct alignment of the nails to create the necessary strength joint),
- draw attention to safety at work during each demonstration of the particular elemental operations.

Pupils worked with interest and enthusiasm when working with the particular tools. While working on the assignment, it was possible to observe that the pupils had a fairly well-developed technical imagination related to the drawings of the objects displayed through the technical drawings. On the other hand, there were also many serious problems with. The pupils failed to use the correct measures, to determine the correct dimensions of the individual parts, to convert the dimensions from millimetres to centimetres, and to mark and then outline the required dimensions to the material. However, they had the greatest problems with hand-sawing, where the splitting of material occurred quite often.

At the end of the lesson, the resulting products (Fig. 4 and Fig. 5) were exposed and the teacher evaluated them verbally, using a mutual comparison of the successful and unsuccessful elements of each model.



Figure 4. Results of pupils' work I



Figure 5. Results of pupils' work II

3.3 Alteration

The following modifications of the lesson were proposed within possible alterations:

- ***Incorporation of motivational elements into the introductory part of the lesson***

As stated in the analysis, there were no motivating factors at the beginning of the teaching unit. The teacher could "tune" the pupils to a greater concentration and active participation in the interpretation and explanation of the new subject matter through the knowledge that the pupils acquire when learning the technical materials ("tuning" the pupils, for example through a motivational interview pointing the already acquired knowledge to practical activities of everyday life).

- ***Incorporation of motivational-activation elements into the introductory part of the lesson***

In the opening part of the lesson, the teacher could also use the activation elements to increase motivation. In the meaning of the above mentioned (see the previous point), these could be e.g. brief demonstrations of new work skills (related to the practical activities of everyday life) subsequently described in detail in the interpretation and explanation.

- ***Incorporation of correct technological practical operations***

During the interpretation and explanation, the teacher could continually encourage pupils to try to fulfil the activities

explained and demonstrated by him, either in their own places (all pupils) or in the teacher's place (called pupils). In this way, he would also receive feedback as to whether the pupils correctly understood his interpretation. In addition, he would turn pupils - passive listeners into the involved participants of the course of the workroom events already during the explanation phase of the lesson.

In the case that training is not included during the explanation phase of the lesson (e.g. due to time constraints), pupils should definitely have an opportunity to try new work operation activities before applying them in the given assignment (ship model construction). Certainly it was necessary to devote a separate extra time space to at least practice the correct technological practical operations of hand sawing and not to leave this training only at the level of a part of the work on the given assignment. Since pupils did not try the new practical operations, there was a "mass failure", especially when working with the saw. The teacher - a teacher trainee with no previous experience - wrongly assumed that the given interpretation and explanation of the correctness of the applied technological practical operations would be sufficient for the pupils and consequently they would be "automatically" able to apply them practically. An adequate solution at the time of this problem appearance could be interruption of pupils' work on the assignment and repetition of the basic instruction and demonstration of sawing.

- **Use of cross-curricular relations with mathematics**

With regard to the problems that pupils had with converting the dimensions of the ship's model from millimetres to centimetres, the teacher was to create a space for repetition and fixation of the mathematics subject matter (length unit conversions), although he did not anticipate this problem and therefore he did not plan such part of the lesson.

- **Involvement of pupils in the assessment of the work on the given topic at the end of the lesson**

At the end of the lesson, the teacher was to activate the pupils by involving them in the assessment of the work on the given topic during the lesson. The pupils could express their comments, opinions and approaches related to their own work as well as to the results of the work of the others. This would result in a higher perception of the given facts by pupils and, moreover, the pupils would be encouraged to think critically, to analyse critically, to evaluate the results of the work of the others, as well as to self-evaluate their own work results and to self-reflect on their own activities.

4 Conclusion

As described in the description of the conceptual analysis of the lesson, through its application it is possible to develop professional competencies and pedagogical mastery of teachers of any subject. Applying different alterations contributes to the elimination of didactic formalism in the pedagogical practice of teachers, manifested by application of "routine" procedures in their work, and at the same time it forces teachers to think X continually about introducing various innovations into their teaching to achieve the best results of their teaching practice. It is precisely this fact the answer to a very specific question set in the title of this paper raises from and a solution of which some readers may "miss" in this paper. So what is our answer to the question of *how to train teachers to support pupils' orientation for technical study programs?* The answer is obvious. A very suitable way is to train teachers of technology to apply AAA methodology in their self-reflection with an emphasis on possible alternations of particular parts of the lessons taught, mainly particular activities of pupils and to pupils assigned tasks, with regard to the contribution of these alterations to the increase of the pupils' interest in technology and technically oriented study programs.

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Primary Paper Section: A

Secondary Paper Section: AM

A REVIEW ON THE MAORI RESEARCH AS THE UNIQUE LANGUAGE AND CULTURAL IDENTITY OF NEW ZEALAND

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Abstract: The aim of this article is to review the Maori research as the unique language and cultural identity of New Zealand. We have discovered that the most distinctive feature of New Zealand English as the national variety is the large number of Maori words and phrases related to indigenous Maori cultural traditions, many of which have become part of general New Zealand culture, as well as to the flora and fauna of New Zealand, along with place names. The article explores the Maori research in terms of language and language policy, historical, social, cultural and political background. In particular, we highlight significant advances made in the cultivation of cultural, educational and communicative value of the language and culture of Maori.

Keywords: bilingual, indigenous, language policy, Maori, New Zealand English, variety.

1 Introduction

New Zealand is one of the most isolated countries in the world. This state of isolation began 80 million years ago. New Zealand's geological origins are ancient, and in places in the South Island there are rocks which are over 570 million years old. But as well as having ancient origins, New Zealand is also a newly-formed country because of more recent tectonic activity and it has existed in its present state for about 10 million years. Today, New Zealand is in an area of the world which is known for active volcanoes and earthquakes.

Because of its isolation, New Zealand was one of the last countries to be occupied by human beings. The people who first came to New Zealand were Polynesian people who had a long history of exploration and migration across the Pacific, and who were later known in New Zealand as Maori (which means *ordinary*). Maori is a member of the Eastern Polynesian subgroup of Austronesian languages, spoken fluently by about 50,000 people, mostly of Maori descent, mostly resident in the North Island of New Zealand.

The first European to reach these islands was Abel Tasman in 1642. The first contact with the English language came with James Cook, who arrived in 1769 and claimed New Zealand for the British Crown. Initially, English was not the only European language spoken in New Zealand, with early settlers coming from many other countries. However, the bulk of the early settlers were English speakers. Many of them arrived in New Zealand via New South Wales in Australia.

New Zealand has three national languages: English, Maori, and New Zealand Sign Language, with English being the most commonly used. Maori make up 15% of the population. J. Hay, M. Maclagan and E. Gordon¹ claim for the past thirty years, there have been many initiatives to support and encourage the Maori language. A significant development for the preservation of the Maori language has been an initiative directed at very young children. Maori preschools have been set up where Maori grandparents pass on their language and customs to their grandchildren. These are known as *Kohanga Reo* (Language Nests) and the first was set up in Wellington in 1982. There are also Maori language immersion primary schools (*Kura Kaupapa Maori*) and secondary schools (*Wharekura*).

Adult learning programs such as *Te Ataarangi* and *Wananga Reo* (immersion courses for adults) were also developed throughout the country with the result that the older generation of fluent speakers is indeed disappearing. Today the amount of spoken Maori varies around the country, with considerably more being heard in the North Island than in the South Island. The language is kept in the public awareness through radio and television programs, together with bilingual road signs and lexical items such as *marae* (a meeting place), *hui* (a meeting), *kaupapa* (an agenda), *powhiri* (a welcome ceremony) borrowed from Maori.

One of the significant influences on the development of New Zealand English has been contact with the Maori language and with Maori cultural traditions. This is reflected in the presence of a large number of Maori words in common use in New Zealand English. A New Zealand researcher J. Belich identifies the three main phases for the entry of Maori words. During the progressive colonization phase (roughly 1840-1880), when difference and independence from Britain were being emphasized, there was an openness to borrowing from Maori with a resulting addition of Maori loanwords to the lexicon. The main types of borrowing at this time were names of flora and fauna and cultural terms.

For the next 90 years, during the recolonization phase (1880-1970), when ties with Britain were being re-established and re-emphasized, there was a resistance to a stabilization of borrowing. The third historical phase, decolonization, began around 1970 and was in large part defined by the disconnection from Britain². In the process of borrowing, there are certain difficulties associated with the discrepancy between the phonetic systems of contacting languages, the insufficient command of the Maori language and the unbalanced exoglossic language situation.

The last decades have been characterized by numerous borrowings from the Maori language in connection with the socio-economic transformation in New Zealand aimed at reviving the Maori language and culture since the 1980s. H. Orsman's «The Dictionary of New Zealand English: a dictionary of New Zealandisms on historical principles»³ contained 746 headwords of Maori origin.

Recent changes in the labelling of settlements and in particular of geographical features has seen the re-introduction of Maori names to replace English names (*Mount Taranaki* was known as *Mount Egmont*). Place names of Maori origin include the Maori name for New Zealand, *Aotearoa*, the names of regions – *Taranaki*, *Wairarapa*, *Waikato* and *Horowhenua*, towns and lakes – *Taupo*, *Rotorua* and *Whakatane*⁴.

The presence of borrowings from the Maori language is an important feature of the national and cultural identity. Words from the Maori language were borrowed in the early stages of colonization, mainly to refer to plants, trees, animals and birds: *kiwi*, *moa*, *tui*, *weka*, *takahe*, *pukeko*, *kokako*, *kotuku*, *korimako*, *piwakawaka* – bird breeds; *hapuka*, *moki*, *terakihi* – fish species; *manuka*, *totara*, *kauri*, *pohutakawa*, *nikau*, *ponga*, *rata*, *matai* – tree species; *katipo* is a poisonous spider.

2 Materials and methods

Early records suggest that although Maori was the dominant language of New Zealand for some time after colonization in the mid-19th century, it did not remain in this position for very long.

² Belich, J.: *Making peoples: a history of the New Zealanders from Polynesian settlement to the end of the nineteenth century*. Auckland: Penguin, 1997. 497 p.

³ Orsman, H.: *The Dictionary of New Zealand English: a dictionary of New Zealandisms on historical principles*. Auckland: Oxford University Press, 1997. 982 p.

⁴ Warren, P.: *Origins and Development of New Zealand English* // *International Journal of Language, Translation and Intercultural Communication*, 2012. V.1. Pp. 81-102.

¹ Hay, J., Maclagan, M., Gordon, E.: *New Zealand English*. Edinburgh: Edinburgh university press, 2008. 184 p.

From the late 1850s the New Zealand population began to reweight from being mainly Maori to being mainly non-Maori. Urban migration in the 1930s and 1950s saw further decline in the Maori language.

English became the language of the economic power and Maori homes shifted to use English. This trend continued until the early 1980s when Maori activists lobbied for support of Maori as a right under the Treaty of Waitangi. D. Starks, R. Harlow, A. Bell⁵ point out Maori is now taught in bilingual and Maori-only schools, it is an optional language in the legal system, it is commonly found in signage, and in the media. Since 1987, Maori has been legislated as an official language, recognized in specified situations such as Parliament and the courts.

R. Harlow⁶ claims modern Maori is arguably the best described of the Polynesian languages. Following very early explorer and missionary wordlists, a succession of descriptive books for the purpose of learning Maori appeared (T. Kendall⁷). The first real attempt to describe the language was produced by Thomas Kendall, a missionary, in «A Korau no New Zealand; or, the New Zealander's First Book» published in Sydney in 1815. This 54 page description was a courageous first attempt, but T. Kendall did not have the technical knowledge to adequately describe the language at that time.

Later, however, under the direction of Professor Samuel Lee, an oriental linguist at Cambridge, T. Kendall used his knowledge of Maori, with the assistance of Hongi Hika and Waikato (a Ngapuhi leader), to compile a grammar and vocabulary called «A grammar and vocabulary of the language of New Zealand» in 1820⁸. With information from Kendall, Samuel Lee designed an alphabet for Maori based on the Romanic conventions used for Sanskrit. The production of textbooks continues to this day, important examples being H. Waiti⁹. Hoani Waititi's (1970) two textbooks «Te Rangatahi 1» and «Te Rangatahi 2» were published in the early 1960s. H. Waititi had taught at several secondary schools in the 1950s, and recognized the need for a series of resources aimed at second language learners of Maori. They avoided grammatical rules, substituting a sustained use of increasingly complex grammatical constructions. More scholarly and analytic study of the language really dates only from Bruce Biggs' doctoral thesis, which is a strict item and arrangement account of Maori phrase structure.

Other books on the structure and grammar soon followed including Robert Maunsell's, an Irish missionary, «A grammar of the New Zealand language» in 1842, William L. Williams', a missionary and later the first Bishop of Waiapu who studied classics at Oxford, «First lessons in the Maori language with a short vocabulary» in 1862, the Williams' family synonymous «A dictionary of the New Zealand language» (1844), which is, without question, the most comprehensive dictionary of Maori¹⁰.

Like other Polynesian languages, except Easter Island, Maori had no written form until the introduction of writing by missionaries, early in the 19th century. However, as in preliterate societies throughout history, there was, and to some extent is, a rich orally transmitted and performed literature. A wide range of poetic or chanted genres existed and continues to exist, and the range of prose genres includes tribal and local histories, genealogies, cosmogonies, folk stories, and traditional knowledge.

R. Harlow stresses the increasing use of Maori in domains such as law, medicine and education, such work makes an invaluable contribution to the normalization of Maori¹¹. This is the process by which Maori becomes a normal language, a language by means of which all aspects of life can be accessed in a normal manner.

Apirana Ngata, the most influential Maori leader of the 20th century, established the Maori Ethnological Research Board in 1923 to promote the study of Maori language, culture and traditions. The breakthrough came at the Young Maori Leaders Conference he sponsored at Auckland University College in 1939. A resolution was passed for the establishment of a Maori social and cultural center to promote Maori adult education through Auckland University College, Teachers College and the Auckland Museum. The outbreak of World War Two delayed action on the solution for a further 10 years.

In 1949 Maharaia Winiata was appointed Maori tutor in adult education at Auckland University. This first foot in the door of the academy was augmented by the 1951 appointment of Bruce Biggs as a junior lecturer in Maori in the Anthropology Department and Matt Te Hau in adult education¹². The trio pioneered the establishment of Maori studies at Auckland University. Winiata and Te Hau focused their pedagogy on cultural reconstruction and the validation and incorporation of Maori knowledge in the academy. Their courses in Maori language, culture, history and the arts of carving and weaving were held off campus on marae in Maori communities.

New Zealand linguists have undertaken the study of Maori. Bruce Biggs's PhD thesis, «The structure of New Zealand Maori», was completed at Bloomington, Indiana, in 1957. Subsequent research on Maori was undertaken by Biggs's students, including Pat Hohepa, Hirini Mead, Ranginui Walker, Richard Benton, Anne Salmund, Pita Sharples and Andy Pawley.

John Moorfield¹³ is recognized as an expert of the Maori language by other Maori language experts. His well-known Te Whanake series of textbooks, multimedia and e-resources is largely based on Maori from the eastern region. When he joined The University of Waikato in 1976, he saw the need for a set of textbooks and resources specifically designed for developing the receptive and productive skills of adult learners of Maori.

D. Day and P. Rewi¹⁴ imply the decrease in the number of fluent Maori language speakers since the 1900s is intimately connected with the movement of Maori into those social, political, and economic environments where communication is always in English, such that the steady loss of Maori language speakers and the decline in the generational transmission of the Maori language accelerated after World War Two with the migration of Maori into urban areas.

R. Benton¹⁵ suggests that since the 1940s, there has been a growing concern among Maori about the state and status of the Maori language. In 1930, for example, a survey of children attending Native schools estimated that 96.6% spoke only Maori at home. By 1960, only 26% spoke Maori. The rapid urbanization of Maori since the Second World War has been a key factor in this language decline. Although the Maori language had been excluded from the realms of the school for more than a century, it had still been nurtured in the largely rural Maori communities. The effects of urbanization were to undermine both these communities and the language they spoke. By 1979,

⁵ Starks, D., Harlow, R., Bell, A.: *Who speaks what language in New Zealand?* Languages of New Zealand. Wellington: Victoria University Press, 2005. Pp. 13-29.

⁶ Harlow, R.: *Maori: Introduction.* Languages of New Zealand. Wellington: Victoria University Press, 2005. Pp. 59-66.

⁷ Kendall, T.: *A korau no New Zealand; or the New Zealander's first book; being an attempt to compose some lessons for the instruction of the natives.* Sydney: G. Howe, 1815.

⁸ Kendall, T., Lee, S.: *A Grammar and vocabulary of the language of New Zealand.* London: Church Missionary Society, 1820. Reprinted by BiblioBazaar, LLC, 2008.

⁹ Waititi, H.: *Te rangatahi: Elementary 1.* Wellington: Government Printer, 1970.

¹⁰ Anderson, M.: *An exploration of the ethical implications of the digitization and dissemination of Mataranga Maori (with special reference to the Pei te Hurinui Jones Collection).* MA thesis. Hamilton: The University of Waikato, 2012. 163 p.

¹¹ Harlow, R.: *Maori: A Linguistic Introduction.* Cambridge: Cambridge University Press, 2012. 256 p.

¹² Walker, R.: *Reclaiming Maori education.* Decolonisation in Aotearoa: Education, Research and Practice. Wellington: NZCER Press, 2016. Pp. 19-39.

¹³ Moorfield, J.: *Te Whakaako i Te Reo – Teaching Maori using the Te Whanake Collection // Te Kaharoa.* 2008. V. 1. Pp. 100-137.

¹⁴ Day, D., Rewi, P.: *Endangered meanings and concepts: Maori language habitats.* Australax. Endangered Words and Signs of Revival, 2013, Proceedings. Adelaide: The University of Adelaide, 2014. Pp. 1-12.

¹⁵ Benton, R.: *The Maori Language: dying or reviving?* A working paper prepared for the East-West Center Alumni-In-Residence Working Paper Series. Wellington: New Zealand Council for Educational Research, 1997. 44 p.

the Maori language had retreated to the point where language death was predicted.

The 1970s are seen as the start of the modern Maori language revitalization movement. Working for the New Zealand Council of Educational Research in the 1970s, Richard Benton undertook the first New Zealand sociolinguistic survey of knowledge and use of the Maori language. The results indicated that only 70,000 fluent speakers of Maori remained, about 5% of the Maori population at the time. R. Benton subsequently strongly advocated both Maori language immersion and bilingual education programs as means of stemming the language loss which his survey had identified. The Benton Survey demonstrated the perilous state of Maori. This seminal research is a key milestone in the history of the Maori language.

Maori language endangerment began when Maori moved into English speaking environments such as the western education system, new areas of employment albeit in rural or urban areas, accessed new technologies, and new means of procuring other amenities required for modern living – which were and are predominantly to this day, conducted in English and required the learning of English¹⁶.

The fate of the language is largely controlled by social forces external to the Maori community. Among these are the economic conditions which have led to a steady depopulation of the rural areas which were the Maori-speaking heartland. Between the 1950s and the 1970s, urban migration was so significant that by the 1980s, the majority of the Maori population had been urbanized for at least a generation¹⁷.

3 Results and discussion

The Maori Language Commission, established in 1987, has its first few years been concerned mainly with the creation of new vocabulary and licensing of interpreters, and with ascertaining the views of Maori communities and interest groups on the future of the language. It had not, by mid-1991, produced a comprehensive plan of action for stemming further language loss¹⁸.

After an extensive sociolinguistic survey during the 1970s, R. Benton¹⁹ estimated that there were about 64,000 remaining fluent speakers of Maori, most of whom were middle-aged or elderly and that Maori was rarely used with children in the home. These findings helped to stimulate a Maori revitalization effort with a particular focus on producing a new generation of younger speakers.

So, despite its status as an official language of New Zealand, there are remarkably few contexts in which Maori can currently be heard. Where fluent speakers are available, Maori is still used on the *marae* – the traditional meeting place of Maori tribes – for formal, ceremonial speechmaking, particularly by men; for some religious ceremonies, and in some homes for informal conversation between those older Maori who still speak the language. It can be heard in some pubs in the very few remaining Maori-speaking areas; on radio for reasonably extensive periods in some areas, though television coverage is minimal; in court and Parliament when Maori speakers choose to exercise their privilege in this respect²⁰.

In 1990, *Te Taura Whiri i Te Reo Maori* (The Maori Language Commission) and the Department of Maori Studies at Massey University commissioned a New Zealand-wide survey to

determine the attitudes of the New Zealand population to the Maori language and its future promotion. This survey used random sampling techniques, unlike the localized studies. It was a postal survey of 400 names selected randomly from the electoral roll; 225 responded, of whom 31 were Maori²¹. Its results were similar to the others, with Maori more supportive of Maori language initiatives than European New Zealanders. However, while two thirds of those surveyed believed that the Maori language had a place in New Zealand society; only one quarter felt that the language should be used more than it was at that time.

Current research on the Maori language focuses mainly on aspects of the revitalization of the language and is spearheaded by three main research groups. The Maori language research unit at *Te Puni Kokiri* is responsible for producing demographic information about the numbers of speakers of Maori and their level of fluency. *Te Puni Kokiri* subsequently took a more bureaucratic but practical approach to developing a Maori language strategy, releasing a series of short policy papers. The first set out the legal obligations of the Government towards the Maori rights and the Draft Declaration on the Rights of Indigenous peoples. The other papers described language planning.

B. Spolsky²² notes that The New Zealand Government agreed to five Maori language policy objectives: to increase the number of Maori speakers by increasing opportunities to learn the language; to improve the level of Maori proficiency; to increase opportunities to use Maori; to develop the Maori language for the full range of modern activities; and to foster positive attitudes so that Maori English bilingualism becomes a valued part of New Zealand society.

Te Puni Kokiri has conducted two major projects on the Maori language. The first was the National Maori Language Survey in 1995, the Year of the Maori Language. The key findings of the survey where published in 1998 and found that: the majority of Maori (83%) had low fluency or do not speak Maori at all; only 8% of Maori adults were fluent speakers of Maori and a third of those were 60 years or over.

The next major survey was held in 2006. Its findings were reported in the 2008 publication *Health of the Maori Language*. It said that 51% of Maori adults had some degree of speaking proficiency and noted a change in attitude towards Maori language. It also proclaimed that the 2006 survey shows significant increases in the number of Maori adults who can speak, to varying degrees of proficiency. However, the full report highlighted that only 4% of New Zealand's total population of around 4 million and only 23% of the total Maori population could speak Maori proficiently²³.

The second research group is based at Massey. *Te Hoe Nuku Roa*, a longitudinal Maori household survey of 550 households, correlates a range of cultural, economic and personal factors, including language use. The third research group centers on the University of Auckland where nineteenth and twentieth-century Maori newspapers have been put online²⁴. Te Taka Keegan from the University of Waikato, who was involved in aspects of this research, has published a number of papers dealing with the interface between indigenous language and the internet.

Te Kura Roa is a three year commissioned research program on the Maori language funded by *Nga Pae O Te Maramatanga*, a Centre of Research Excellence hosted by the University of Auckland. One focus project under this is *Project Waiaro* which surveys attitudes in New Zealand government departments

¹⁶ Williams, D.: *Crown policy affecting Maori knowledge systems and cultural practices*. Wellington: Waitangi Tribunal Publication. 2001. 343 p.

¹⁷ Moon, P.: *A chequered renaissance: The evolution of Maori society, 1984-2004* // *Te Kaharoa*, 2009. V. 2, Pp. 23-41.

¹⁸ Benton, R.: *The Maori language in New Zealand*. Atlas of Languages of Intercultural Communication in the Pacific, Asia Atlas of Languages of Intercultural Communication in the Pacific, Asia, and the Americas Vol I: Maps. Berlin, New York: Mouton de Gruyter, 1996. Pp. 167-171.

¹⁹ Benton, R.: *Maori English: a New Zealand myth?* English around the world: sociolinguistic perspectives. Cambridge: Cambridge University Press, 1991. Pp. 187-199.

²⁰ Holmes, J.: *Maori and Pakeha English: Some New Zealand social dialect data* // *Language in Society*, 1997. V. 26. Pp. 65-101.

²¹ Boyce, M.: *Attitudes to Maori. Languages of New Zealand*. Wellington: Victoria University Press, 2005. Pp. 86-110.

²² Spolsky, B.: *Maori lost and regained*. Languages of New Zealand. Wellington: Victoria University Press, 2005. Pp. 67-85.

²³ Duder, E.: *Ko to ringa ki nga rakau a te Pakeha – The use of digital resources in the learning and teaching of te reo Maori: A case study*. MA thesis. Auckland: The Auckland University of Technology, 2010. 175 p.

²⁴ Maclagan, M., Hay, J.: *Sociolinguistics in New Zealand*. The Routledge handbook of sociolinguistics around the world. London/New York: Routledge Taylor and Francis Group, 2010. Pp. 160-161.

towards the Maori language. Interview participants, who comprised a wide range of Maori language proficiency levels, were asked about what prevented them using the Maori language in the government workplace.

Many responded that an absence of Maori language terminology to reflect work activities, technology, and work structures often caused their Maori language communication to falter. In response to the question 'do you prefer to use English at work', most survey participants, who did not perceive proficiency level as an issue preventing their workplace Maori language communication, said that it was easier to speak English. The implication they shared was that it was the lack of vocabulary for workplace environments which made speaking the Maori language difficult.

D. Day and P. Rewi²⁵ claim *Te Kura Roa Waiaro* research is showing this can be true even for some of those government departments, or workflows within a government department, specifically aimed to provide services to Maori. In many ways, however, the Maori language at least has a presence in government workplaces whereas in previous decades it did not. Increasingly, Maori language speakers are at least able to engage, albeit with some difficulty at times, with government departments in the Maori language, and while Maori language speaking government employees themselves frequently reported few daily opportunities to communicate in the Maori language, for many the government workplace was the only place they were exposed to the Maori language beyond what they might hear on Maori television programs.

In New Zealand, Maori scholars have coined their research approach as *Kaupapa Maori* or Maori research. The genealogy of indigenous research for Maori has one of its beginnings in the development of alternative Maori immersion-based schooling. L. Smith²⁶ describes *Kaupapa Maori* research as a positive approach that sets out to make a positive difference for Maori, that incorporates a model of social change or transformation that privileges Maori knowledge and ways of being, that sees the engagement in theory as well as empirical research as a significant task, and that sets out a framework for organizing, conducting, and evaluating Maori research.

H. Jahnke and J. Taiapa²⁷ claim that *Kaupapa Maori research* emerged from, and was influenced by, several developments: first, the worldwide move of indigenous people to increase their self-determination over land, culture and language; second, a greater commitment to the intentions of the Treaty of Waitangi, which meant that there would be greater collaboration between Maori and non-Maori, sharing of research skills, and greater protection of Maori data and participants; third, the growth of initiatives which had emerged from the revitalization movement, for example, the introduction of *Kohanga Reo* (Maori language pre-schools) and *Kura Kaupapa* schools where Maori language and *tikanga* (culture and customs) were taught, as well as the emergence of specific health models for Maori like *Te Whare Tapa Wha*, also encouraged Maori to begin to create their own processes of research.

Kaupapa Maori research should be distinguished from other kinds of research involving Maori. For example, culturally safe or sensitive research, which developed from the practice of Maori nurses, aims to respect and nurture the unique cultural identity of Maori and safely meet their needs. Culturally safe research may be practiced by Maori or other indigenous groups or non-Maori. *Kaupapa Maori research* is about Maori control and focuses on Maori participants. In this type of research,

Maori design, plan, gather data, analyze, and write up the research²⁸.

The most prominent variety of New Zealand English, and the fastest growing, is an ethnic variety called Maori English. It is heard most frequently in areas of high Maori population, such as the far north of the North Island or the East Cape.

However New Zealand linguists have found Maori English elusive. They have been looking for it since at least the 1960s. By 1990 they had almost given up on specifying any clear and conclusive differences between Maori and New Zealand English. In the 1990s the study of large samples of New Zealand English began to produce findings of consistent relative differences between the English of Maori and European New Zealand English speakers²⁹. Linguists began to confirm a core of features which differentiated the two varieties quantitatively if not qualitatively. The main work had used data from the Wellington Corpus of Spoken English and the *Porirua social dialect survey*.

The most noticeable feature of Maori English is the rhythm. For Maori, morae contain a vowel and any preceding consonant, and are of relatively equal length. This is contrast to English which is stress-timed language and where syllables differ markedly in length. Maori English is considerably more syllable-timed than general New Zealand English, and Maori English speakers use more full vowels than European New Zealand English speakers in function words like *of, to, for*³⁰. Maori English is becoming more noticeably syllable-timed. The end result of this process of mutual influence may well be that New Zealand English and Maori, while still having distinctly different rhythms, may become more alike than they were in the past³¹.

The Maori speakers recorded by the Mobile Unit formed the basis of the Maori and New Zealand English Project (MAONZE), which has studied the development of the pronunciation of the Maori language, the language of the indigenous people of New Zealand. The MAONZE database also includes ten recordings of older speakers born approximately 50 years after the historical speakers and ten younger speakers born approximately 50 years later still. It also includes parallel recordings of women speakers. These recordings allow the MAONZE study group to trace the development of Maori pronunciation from early contact with Europeans in the 1800s to the present day³². Copyright for the Mobile Unit material is held by Radio NZ archives, *Nga Tonga Sound and Vision*. Copies of the recordings are held at the University of Canterbury.

The men and women born in the late 1800s provided an indication of the pronunciation of Maori before it was heavily influenced by English. There have been great changes in Maori in the 160 years since European settlement in New Zealand. In the experiment, the researchers played the stimuli to 30 Maori speaking listeners who were required to identify the language of the speakers. The set of sentences were exactly the same as in the earlier low-pass filtered experiment. These results suggest whilst English and Maori can be distinguished on the basis of pitch (plus timing) cues, these alone are not sufficient to capture any changes in the prosodic cues in Maori. It is necessary to include the amplitude information as well.

L. Thompson, C. Watson, H. Charters, R. Harlow, P. Keegan, J. King, M. Maclagan³³ compared the results from the Maori

²⁵ Day, D., Rewi, P.: *Endangered meanings and concepts: Maori language habitats*. Australax. Endangered Words and Signs of Revival, 2013, Proceedings. Adelaide: The University of Adelaide, 2014. Pp. 1-12.

²⁶ Smith, L.: *On tricky ground: researching the native in the age of uncertainty*. The SAGE Handbook of Qualitative Research. Thousand Oaks: Sage Publications, 2005. Pp. 85-108.

²⁷ Jahnke, H., Taiapa, J.: *Maori research*. Social Science Research in New Zealand: Many Paths to Understanding. Auckland: Long Pearson Education, 2003, Pp. 39-50.

²⁸ Walker, S., Eketone, A., Gibbs, A.: *An exploration of Kaupapa Maori research, its principles, processes and applications* // International Journal of Social Research Methodology, 2006. V. 9. № 4, Pp. 331-344.

²⁹ Bell, A.: *Maori and Pakeha English: a case study*. New Zealand English. Wellington: Victoria University Press, 2000. Pp. 221-249.

³⁰ Holmes, J.: *Leadership talk: how do leaders "do mentoring", and is gender relevant?* // Journal of Pragmatics, 2005. V. 37. № 11. Pp. 1779-1800.

³¹ Hay, J., Maclagan, M., Gordon, E.: *New Zealand English*. Edinburgh: Edinburgh university press, 2008. 184 p.

³² Boyd, D., Maclagan, M.: *Sociolinguistics, language and aging*. Cognition, language and aging. Amsterdam/Philadelphia: John Benjamins Publishing Company, 2016. Pp. 221-246.

³³ Thompson, L., Watson, C., Charters, H., Harlow, R., Keegan, P., King, J., Maclagan, M.: *An experiment in meta-reading: investigating perception of rhythmic prominence in the Maori language*. Thirteenth Australasian International Conference

listeners to a group of European New Zealand English listeners who performed a similar task, although on a subset of the stimuli. In this task the European New Zealand English listeners were not able to distinguish between the speaker groups in any condition, although the smaller number of stimuli may be a confounding factor here.

Much of the sound change in Maori documented by the MAONZE project has been influenced by English. The results of the analyses to date have implications for the revitalization efforts of other indigenous languages in that J. King, M. Maclagan, R. Harlow, P. Keegan and C. Watson³⁴ predict that vowel systems will lose contrasts which are not present in the colonizing language, and that sound change in the colonizing language will affect the indigenous language. The results of the vowel analysis have also been published in Maori in order that the implications reach as wide a local audience as possible.

4 Conclusion

We have considered the Maori research as the unique language and cultural identity of New Zealand. Maori, the indigenous language of New Zealand, is one of the most well-known endangered languages. The Maori people constitute about 15% of the New Zealand population, which is predominantly made up of people of European origin. Since 1987, Maori has been legislated as an official language, recognized in specified situations such as parliament and the courts.

Over the last 150 years, Maori has been steadily displaced from domains of New Zealand interaction, and English has taken over its functions. English is the everyday language of trade, social interaction, commerce, government and education in New Zealand. It is worth noting that the most distinctive feature of New Zealand English as the national variety is the large number of Maori words and phrases related to indigenous Maori cultural traditions, many of which have become part of general New Zealand culture, the flora and fauna of New Zealand, along with place names.

We have explored the value of good Maori research about the state of the Maori language in terms of language and language policy, historical, social, cultural and political background. We have highlighted the importance of a strong professional workforce supported by all education agencies and the community in the cultivation of cultural, educational and communicative value of the language and culture of Maori. It needs to be noted that for the past 30 years, there have been many initiatives to support and encourage the Maori language. Maori led in the establishment of *Kohanga reo* (language nests), *Kura Kaupapa Maori* (Maori immersion elementary schools) and Maori language immersion units in mainstream schools in an effort to increase the number of children able to speak the Maori language. New Zealand colleges, universities, and research centers with the cooperation of the state organizations, the Maori of the older generation conduct effective work on the revival of the cultural Maori heritage; carry out major socio-cultural activities amongst the general New Zealand population; develop a special method of teaching the Maori language as an ethnic group as well as to persons who do not belong to this community.

It needs to be noted that there has been an increase of self-determination among the Maori people, the expansion of the communicative use of Maori in public and political life, education, and mass communications in New Zealand. The use of the Maori language is also observed in educational institutions as a teaching subject.

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FORMATION OF REGIONAL STRATEGIES OF COMPETITIVENESS ENHANCEMENT ON BASE OF CLUSTER ANALYSIS INTERPRETATION RESULTS

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Abstract: Determining the competitiveness of regions is necessary to understand the effectiveness of regional socio-economic policies. The aim of the research is to interpret the results gained applying cluster method in the framework of formation of Ukrainian regions competitiveness enhancement strategies. The methodology of the research is to use cluster analysis, to build a multidimensional statistical model for grouping regions according to the principle of similarity of socio-economic development parameters, methods of analysis and synthesis, induction and deduction, graphical method. Result is based on implementing the method of cluster analysis and broadening the sphere of its application in the framework of regional competitiveness estimation and advancement of strategies of regional development.

Keywords: cluster analysis, competitiveness, effectiveness, region, regional policy, strategic management, socio-economic development, Ukrainian regions.

1 Introduction

The modern development of the regions requires the development of a development strategy that addresses their advantages and efficiency. In addition the strategy should shape competitive regions in order to enhance Ukraine's competitiveness as a country in the world community. Regions should not compete with each other in the economic struggle for resources, but should use their advantages to strengthen each other. The use of cluster analysis reveals groups of regions with similar socio-economic development and problems.

Regional development strategies are based on an understanding of the weaknesses and efficiency of the regions. As competitiveness is a multidimensional set of characteristics of the socio-economic environment of the region, proposed is the use of cluster analysis.

The research of methods and mechanisms of regional development strategy formation is devoted to the work of foreign and domestic scientists. Ketels's work [1] is devoted to explaining the strategy of territorial competitiveness formation. N.Adams and N. Harris [2] wrote about guidelines and instruments for regional development, using the example of spatial planning in the European Union. A. Rugman and A. Verbeke [3] investigated the impact of transnational corporations on regional development. A.Rugman [4] explored the impact of globalization on regional economies and regional strategies. It is suggested to use cluster analysis to analyze the strategic development of the regions based on improvement their competitiveness.

Cluster analysis is a multidimensional statistical procedure that "... involves the collection of data that stores information about the sampling of objects and the ordering of objects into relatively homogeneous groups" [5, p. 518].

Studying the cluster method of differentiation of regions requires the following tasks: research of the method of cluster analysis, its essence, algorithm of carrying out. Development of algorithm of cluster grouping of regions of Ukraine by indicators of socio-economic development of regions for 2018, its implementation on the basis of actual materials of the State Statistics Service of Ukraine using modern software products, interpretation of cluster decisions and generalization of the obtained results.

In economic studies, multidimensional statistical methods are quite useful, which among the many probabilistic statistical models allow us to reasonably select the one that best fits the original statistics that characterize the actual behavior of the studied set of objects, evaluate the reliability and accuracy of

conclusions, and the conclusions gained as per statistical material. [6, P. 38]

Cluster analysis methods can be applied in a variety of cases, even when it comes to simple grouping, but the use of cluster analysis in the process of assessing the competitiveness of Ukrainian regions is a difficult grouping because it covers indicators from different industries.

A cluster analysis method is a multidimensional statistical procedure that involves collecting data containing information about a selected objects and ordering objects into relatively homogeneous groups [7, p. 141]. The primary purpose of the analysis is to distinguish in the original multidimensional data such homogeneous subsets so that the objects within the groups are alike in a certain value and the objects in the different groups are not alike. "Similarity" means the closeness of objects in the multidimensional space of features [8, p. 10]. The cluster analysis technique is useful in situations where information about the possible structure of object classes is completely or partially missing. [6, C. 39]

Since the State territorial structure of Ukraine provides for the division of the territory into regions, the use of regional policy of economic development and the use of budgetary financing and financing of the State Development Fund.

2 Theory

The competitiveness of the region in today's globalization world is not only a "struggle", but on the contrary – an "active creative environment". Creating a competitive advantage for regions provides benefits for investment development, capacity building and intellectual capacity (leading to improved demographics and growth in GRP through the use of business and service potential). Creating an favourable environment for other resources to grow. The use of new tools for improvement competitiveness is becoming increasingly relevant.

Kitson in e-mail (2004) [9] argued that regional competitiveness focuses more on drivers and the prosperity of a region (or city) in the long run than for more restrictive understanding of competition for markets and resources.

At the end of the twentieth century the concept of competitiveness of regions has become increasingly important in the scientific and political circles. "Regions and cities have no other choice but only to become competitive in order to survive in the new globalized market of new competition," notes Best American [10, 11].

The founder of the "rhombus" of competition, M. Porter and co-author Ketels [12], state that "competitiveness remains a concept that is not completely understood, despite its broad definition of its importance. In order to understand competitiveness, the sources of prosperity of a nation must be the starting point. The standard of living of a nation is determined by the productivity of its economy which is measured by the value of its goods and services produced per unit of human capital and natural resources of the country. Productivity depends both on the value of the nation's products and services, measured by the prices they can operate in the open markets, and the efficiency which they can be produced. Real competitiveness is thus measured by productivity. Productivity allows the nation to maintain high wages, a stable currency and an attractive return on capital, and with it a high standard of living."

R. Cellini and A. Soky [13] argue that "the concept of regional competitiveness is neither macroeconomic (national) nor microeconomic (based on the performance result): regions are neither a simple integration of firms nor reduced versions of nations." R. Camagni [14] supported a similar view. It assumes that regions are really competing, but based on absolute competitive advantages, not comparative ones. A region may be

considered to have absolute competitive advantages if it possesses distinct technological, social, infrastructure or institutional assets that benefit individual firms in such a way that no alternative price factors will cause a geographical redistribution of economic activity. These assets typically give the region's firms overall better performance than otherwise. According to the European Commission: "The idea of regional competitiveness should reflect the idea that despite the presence of strong competitive and non-competitive firms in each region, there are common features in the region that affect the competitiveness of all firms located there.

Although competitiveness is not straightforwardly defined, it has become one of the most popular concepts among scientists [15].

Using the results of the cluster analysis of the competitiveness of the regions will create mutually beneficial economic ties between state authorities, business, science and education, social sphere, which will lead to multiplicative development of the territory and will allow to form state development programs.

Today as practice shows when implementing regional policy programs, the calculation takes place on the "middle" region and consists in mining on the basis of statistical data, which ultimately leads to a lack of methodological support and weak argumentation in the development of regional policy directions [16]

Cluster analysis alone does not provide the necessary information for making informed management decisions. In regional management an integrated approach is important which includes a system of methods for: researching the current situation; identify problem areas in the socio-economic condition of the region; development of a regional development strategy [16] in order to identify specific areas for further development in a similar socio-economic situation.

There is no generally accepted definition of the term "cluster", but it is obvious that a cluster can be characterized by a number of features, "... the most important of which are density, dispersion, size, shape and separability" [16]. The result of cluster analysis is the partition of the objects in the original sample into a number of clusters. Moreover, each cluster includes one or more objects that are characterized by similar changes in the initial indicators in other words the regions of a particular cluster are less differentiated when compared with regions of other clusters [16]. B.G. Mirkin in the book "Groupings in socio-economic research" [17, p. 42-43], notes that "the most natural thing is to give a strict definition of a compact group, and then construct the group as a collection of compact groups in the sense of this definition." So B.G. Mirkin suggests calling a group of objects a cluster if the maximum distance between its points does not exceed the minimum distance "outside". R.R. Sokal in the book "Cluster Analysis and Classification: Prerequisites and Key Directions" [18, p. 7-19] describes that: the cluster analysis algorithm is essentially a regional classification algorithm. "It is often claimed that classification is one of the fundamental processes in science. Facts and phenomena must be streamlined before we can understand them and develop general principles that explain their appearance and apparent order. From this point of view, classification is a high-level intellectual activity necessary for us to understand nature"

Despite the differences in goals, data types, and methods used, all studies using cluster analysis are characterized by five major steps [7, p. 145-146]: sampling selection for clustering; determining the number of features by which the sample objects will be evaluated; calculating values of varying degrees of similarity between objects; applying cluster analysis to create groups of similar objects; validation of cluster solution results.

Most often, cluster analysis is used to segment territorial entities by a set of socio-economic indicators [16].

3 Data and Methods

In the framework of this study, the stages of cluster analysis were supplemented and detailed on the basis of which a cluster grouping methodology was developed, adapted to the analysis of regional competitiveness. This technique involves the consistent realisation of the basic procedures shown in Fig. 1. The following groups of regional indicators were selected for analysis: social, economic, demographic, infrastructure (transport, energy, construction), industry and agriculture.

Each of these stages plays a significant role in the use of the cluster method in the analysis of data of socio-economic development of Ukrainian regions.

According to the described algorithm of grouping of regions of Ukraine on the basis of cluster analysis of competitiveness the main purpose of cluster grouping (stage 1) has been determined. The purpose of the cluster analysis of the competitiveness of Ukrainian regions is to continue investigate individual groups of regions and improve their development strategy, as well as to identify the link between their socio-economic development, competitiveness, attractiveness for the population and business.

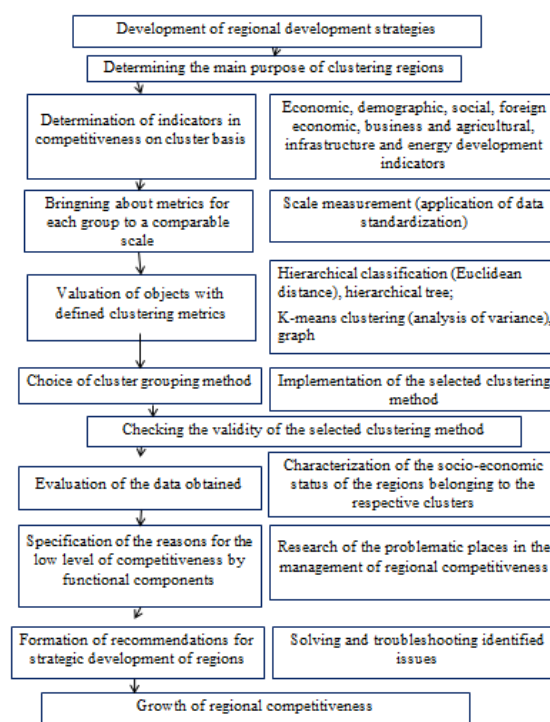


Figure 1 - An algorithm for analyzing the competitiveness of regions

In the second stage of the study, competitiveness indicators were determined, on the basis of which clustering will be carried out.

The choice of variables in cluster analysis is one of the most important steps in the research process [6, p. 40].

To carry out the analysis used were official statistical reports published on the website of the State Statistics Service as the source data .

Table 1: Factors selected for cluster analysis

Group of factors	Variable	Units of measurement
Economic	Number of registered unemployed people	thous.
	Average monthly earnings per	UAH

	employer, nominal wages,	
	Consumer price index before December of previous year	-
Demographic	Number of new-born children	persons
	Residential population	number of people
	Number of decedent	persons
Business and agriculture development	Amount of industrial products sold	mil. UAH
	Number of legal entities	number of units
	Retail turnover,	mil. UAH
	Index of agricultural products	-
Infrastructure	Amount of building and construction works	thous. UAH
	Freight	ton-kilometrs
	Passenger transportation	million passenger/km
Social	Number of criminal offenses recorded	cases
Foreign Economic	Export of goods	millions of US dollars
	Import of goods	millions of US dollars
Energy	Fuel reserves	thousands of tons pit coal
	Supply of electricity, gas, steam and conditioned air,	thous. UAH

The criterion for the selection of indicators (factors) was group selection, the essence of which consists in the choice of a set of factors, for their subsequent grouping as per 7 socio-economic and infrastructure subsystems (Table 1). This group of subsystems gives a multidimensional picture of the socio-economic situation of the regions. The factors were selected according to an earlier study [19]. The analysis of indicators by functional components will allow to investigate in more detail the problematic places in its management (organization) in order to solve and eliminate the identified problems.

4 Methods or Model

Cluster analysis uses the polyethical principle of group formation - all attributes are simultaneously involved in grouping, that is, they are taken into account at the same time when a particular group was assigning as object. At the same time, as a rule, no clear boundaries for each group are specified and it is also unknown in advance how many groups it is expedient to distinguish in the population studied [20].

Since all algorithms used in cluster analysis require estimating distances between clusters or objects the scale of the measurements must be set. The indicators selected use different types of scales and units of measurements that need to be standardized.

In the first stage, the "natural" clusters are formed can be used for further analysis. Euclidean distance is defined as a measure of proximity.

The measure of proximity determined by the Euclidean distance is the geometric distance in the n-dimensional space and is calculated as follows:

$$d(x, y) = \sqrt{\sum_{i=1}^n (x_i - y_i)^2} \quad (1)$$

The description of the vertical tree diagram starts from the top of each area in its own cluster. As soon as the top-down feature expressed, the areas that are closer to one another merge and form clusters. Each node of the diagram is a union of two or more clusters. Linkage distance defines the distance at which the respective clusters have been merged.

All calculations were realized using the Stat Soft Statistica software.

Based on the results shown in Fig. 2, it is recommended to use 4 natural clusters for further analysis. That is according to the results of hierarchical classification, it is found that for further investigation with the k-means method it is advisable to use the assertion that the given array of data forms 4 clusters (identified 4 areas that "touch" each other more closely).

The most important result of tree clustering is hierarchical tree (Fig. 2).

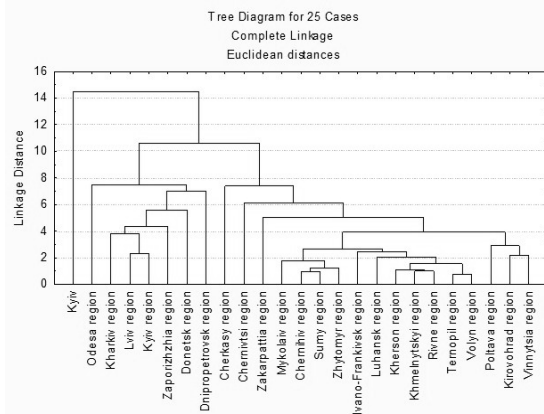


Figure 2 - The result of the hierarchical classification of the competitiveness of regions in the Euclidean distance

It is possible to test this hypothesis using the k-means method which consists of dividing the output data into 4 clusters (according to their competitiveness indicators) and checking the significance of differences between the groups. The k-means method is as follows: the calculations start with the 4 observations we have chosen which are the centers of the clusters when the object composition of the clusters is modified to minimize intra-cluster variability and maximize inter-cluster variability. Each subsequent observation belongs to the group whose degree of similarity with the center of gravity is minimal. After changing the composition of the cluster a new center of gravity is calculated, most often as the vector of averages for each parameter. The algorithm continues until the composition of the clusters stops changing. Once the classification results have been obtained, it is possible to calculate the average of the values for each cluster to evaluate their differences.

To determine the significance of differences between the clusters obtained, the analysis of variance was used the results are given in Table. 2.

Table 2: Results of analysis of variance

Variable	Between SS	Within SS	F	Signif. p
Number of registered unemployed people, thous.	10,81823	13,18177	5,7449	0,004944
Average monthly earnings per employer, nominal wages, UAH	20,33172	3,66828	38,7980	0,000000
Amount of industrial products sold,	12,75850	11,24150	7,9446	0,000996

mil. UAH				
Amount of building and construction works, thous. UAH	19,20375	4,79625	28,0274	0,000000
Export of goods, millions of US dollars	17,78067	6,21933	20,0126	0,000002
Import of goods, millions of US dollars	22,98329	1,01671	158,2385	0,000000
Freight ton-kilometers	10,44718	13,55282	5,3959	0,006521
Retail turnover, mil. UAH	20,88885	3,11116	46,9992	0,000000
Residential population, number of people	16,90737	7,09263	16,6865	0,000009
Number of newborn children, persons	18,11236	5,88764	21,5344	0,000001
Number of decedent, persons	18,92119	5,07881	26,0786	0,000000
Number of criminal offenses recorded, cases	20,68826	3,31174	43,7286	0,000000
Index of agricultural products	9,99710	14,00290	4,9975	0,009025
Fuel reserves, thousands of tons pit coal	3,95129	20,04871	1,3796	0,276469
Supply of electricity, gas, steam and conditioned air, thous. UAH	14,69623	9,30377	11,0572	0,000145
Passenger transportation, million passenger/km	20,90280	3,09720	47,2425	0,000000
Number of legal entities	22,94121	1,05879	151,6722	0,000000
Consumer price index before December of previous year	3,49182	20,50818	1,1919	0,336948

The disadvantage, as well as a feature of clustering methods, is the fact that there are no uniquely defined and strict criteria for identifying the number of possible homogeneous segments. Each time the researcher independently decides on the number of clusters, focusing on theoretical and practical considerations. That is why determining the number of clusters is always a difficult question for the researcher. Sometimes it is possible a priori (before conducting cluster analysis) to determine this number, having an idea of the essence of the phenomenon under study. However, in most cases, the number of clusters is determined only in the analysis process. It should also be noted here as the number of clusters is set by the researcher independently, this allows to use subjective criteria during the analysis [21].

5 Results

In the course of the research, an analysis was carried of and it was found that the separation of the 4 groups was the most reasonable. The first cluster includes the regions: Dnipropetrovsk region, Donetsk region, Zaporizhzhia region, Lviv region, Odessa region, Kharkiv region. They are industrialized regions. The major centers of these regions are large cities with a population of 800 thousand inhabitants.

The second cluster includes regions of Ukraine Vinnytsia region, Kyiv region, Kirovograd region, Poltava region, Cherkasy region.

Table 3: Members of cluster and Distance from Respective Cluster Center, 2018

Cluster 1		Cluster 2		Cluster 3		Cluster 4	
Region	Distance	Region	Distance	Region	Distance	Region	Distance
Dnipropetrovsk region	1,07	Vinnytsia region	0,404	Kyiv	0	Volyn region	0,199
Donetsk region	0,906	Kyiv region	0,61			Zhytomyr region	0,355
Zaporizhzhia region	0,723	Kirovograd region	0,50			Zakarpattia region	0,757
Lviv region	0,562	Poltava region	0,40			Ivano-Frankivsk region	0,404
Odesa region	1,005	Cherkasy region	0,978			Luhansk region	0,366
Kharkiv region	0,519					Mykolayiv region	0,388
						Rivne region	0,206
						Sumy region	0,305
						Ternopil region	0,175
						Kherson region	0,152
						Khmelnytskyi region	0,191
						Chernihiv region	0,243
						Chernivtsi region	0,807

The third cluster includes the city of Kyiv, the capital of Ukraine and it has its own economic features related to the administrative and territorial situation. The city of Kyiv is the capital of Ukraine, the largest city in the country and is distinguished by state statistics as a separate region because of its special status, which is enshrined at the legislative level. It should be noted that among the sample of indicators the agricultural index for Kiev is not determined.

The fourth cluster includes the following regions: Volyn region, Zhytomyr region, Zakarpattia region, Ivano-Frankivsk region, Luhansk region, Mykolayiv region, Rivne region, Sumy region, Ternopil region, Kherson region, Khmelnytskyi region, Chernihiv region, Chernivtsi region.

Thus, 4 clusters were identified, where there are differences between degrees of socio-economic development. For a more detailed study, we show the results of cluster grouping in Fig. 3.

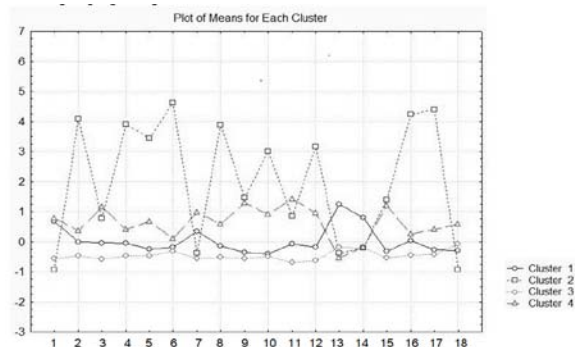


Figure 3 - Graphical representation of cluster grouping, 2018

Each set of indicators was allocated according to clustering parameters to compare with the results of multidimensional grouping of regions with selected competitiveness indicators. Summarizing the results made it possible to state that economic, demographic, social, foreign economic, indicators of business and agriculture, infrastructure and energy sector significantly affect the effectiveness of the region (meeting the needs of residents, improving their well-being).

Comparison of indicators of each group allows to determine in advance the reasons for the unsatisfactory level of competitiveness of the region, among which may be: unacceptable organization of cooperation between government and business (sector of production and agriculture), irrational management of local government infrastructure development, imbalance of foreign economic sector, social problems.

Due to the relevance and specificity for every region specific there exist of low competitiveness. Further integrated assessment of the factors of the above indicators by functional components will allow to explore in more detail the problematic places in its management (organization) in order to solve and eliminate the problems identified.

Let us analyze the characteristics of socio-economic development indicators of each cluster, which revealed similarities between regions (table 4).

Table 4: Group indicators for competitiveness

Cluster 1		Cluster 2		Cluster 3		Cluster 4	
Most competitive		Competitive		Less competitive		Least competitive	
High rates (>1)	Low rates (<1)	High rates (>1)	Low rates (<1)	High rates (>1)	Low rates (<1)	High rates (>1)	Low rates (<1)
13	-	2, 3, 4, 5, 6, 8, 9, 10, 12, 15, 16, 17	1, 7, 18	All dates are close to low ones		3, 7, 9, 10, 11, 12, 13, 15	-

Thus, it is necessary to conclude that the regions belonging to the first cluster are characterized by above average agricultural production index. These regions (except for the Lviv region are concentrated in the south and east of Ukraine) are the most competitive regions of the country. Indicators of our interest are the number of unemployed registered (signaling a difficult socio-economic situation), the turnover (population and number of industrial enterprises in the regions require) and fuel reserves (pit coal). Other indicators have averages of distances.

The regions that are united in the second cluster are characterized by a high trend in terms of: nominal average monthly wage of an employee, volume of industrial production, volume of construction work completed, export of goods and imports of goods (indicates active foreign economic activity), retail trade turnover, number of permanent population, number of live births, number of reported criminal offenses, passenger traffic, number of legal entities

The below average indicators include the number of registered unemployed and the Consumer Price Index (which is a positive trend) and the turnover in these regions.

It can be noted with certainty that the regions that are the result of the analysis of the first and the second cluster (Dnipropetrovsk, Donetsk, Zaporizhzhia, Lviv, Odesa, Kharkiv, Vinnytsia, Kyiv, Kirovograd, Poltava, Cherkasy regions) are the most competitive among the regions of Ukraine and interesting for living for residents have the highest rates of socio-economic development.

The third cluster is a city with a special charter the capital Kyiv. However, the calculated competitiveness indicators are below average Consumer price index and fuel reserves. The death rate is below average.

Regarding the characteristics of the fourth cluster (they are all the other areas which are not included in the first three clusters), it should be noted that they do not have below average values. The volume of industrial production, freight turnover, number of permanent population, number of live births, number of deaths, number of reported criminal offenses, index of agricultural production, supply of electricity, gas, steam and air conditioning

are slightly above average. Regions, which inhere into the fourth cluster grouping, are the least competitive ones.

6 Conclusions or Discussion and Implication

As a result of applying the system of methods, groups of Ukrainian regions with similar socio-economic development and weaknesses were identified. They are associated with weaknesses in the region's overall competitiveness. In this regard, regional and national programs and the development of development strategies should take into account the identified strengths and features in order to improve the situation in the subsystems with high rates and the concentration of resources in problem areas.

It was also established by the diagnostic results that, even at first glance, prosperous regions (which are included in the first cluster) also need support from the state for individual subsystems.

The practical results of our study showed that the cluster analysis method based on the results of multidimensional ranking of socio-economic and infrastructural subsystems allows you to expand the scope of existing ideas about the state of the areas studied. In addition, the application of the cluster approach provides a proper informational and analytical substantiation for the selection of priorities and guidelines for regional policy which should form the basis for planning the actions of state authorities and local self-government [16]

The development of a strategy for the development of a regional socio-economic system is relevant for a number of reasons [22, p. 159-162]: the strategy forms the basis for further development of other programmatic and project development documents; it contains the basis for concluding an agreement between the entities and strategic management entities for a common financing over several years of those tasks that reflect the area of interest and are of the highest priority. Strategy development contributes to the formation of new relationships between participants in questions.

According to the authors in [2, p. 340] "The greatest failures of strategic management occur when executives take any viewpoint excessively seriously." Therefore, it is important in strategic management not to be passionate about planning, but to consider this activity from a geometric standpoint and be based on careful calculations.

Table 5: Priority strategic directions of cluster development

Cluster	Competitive field	Priority strategic directions of development	Performance benchmark of competitiveness enhancement
Cluster 1	Active enlightened population, foreign investments, state funding of infrastructure, industrial market (domestic and overseas)	Growth in employment by creating new jobs, increasing state support for industrial enterprises, building up infrastructure in the region (especially transport and energy), attracting foreign direct investment	The number of active population per territory unit of the region, the rate of growth of foreign investments in the region, percentage ratio of international investments and gross regional product, percentage of funding of regional infrastructure items in local budgets; taxes paid by production enterprises to the local budgets, structure of regional production enterprises' export, indicators of ecological conditions of natural resources
Cluster 2	Scientific-and-technological community, state funding of regional infrastructure, foreign investments	Application of existing socio-economic potential in the field of commercialization of innovations and creation of enterprises of the new smart-format, development of	The number of scientific-and-technological institutions in business infrastructure of the region, the percentage of population with higher education, the rate of growth of foreign investments in

		transport infrastructure in the regions	the region, the percentage of financing of regional infrastructure in the local budget, indicators of commercialization of scientific and technical activities, indicators of ecological conditions of natural resources
Cluster 3	Foreign investments, scientific and industrial potential (physical resources, academic personnel), overseas market	The city of special status requires the development of a separate strategy for development and enhancement of competitiveness in the main areas: economy, social environment, infrastructure, business development, foreign economic activity.	Rate of foreign investments growth, indicators of business activity in the region, financing of infrastructure items, indicators of ecological condition; taxes paid to the state and local budgets by production enterprises of the region; dynamics and structure of goods and services exports
Cluster 4	Physical resources, fuel and power resources, financial support of regions by the state, domestic and international investors, active population, amenity infrastructure.	Support for foreign economic activity in the regions, development of energy infrastructure	Energy balance, number of active population per territory unit of the region, rate of growth of foreign investments in the region, percentage ratio of international investments and gross regional product, gross income of industrial and service enterprises, dynamics and structure of regional exports, state and regional funding of social infrastructure, indicators of ecological condition of natural resources

Strategic planning for regional development is a complex dynamic process that determines not only data collection, grouping, analysis, setting goals and operational plans, but also forecasting territorial development taking into account national socio-economic development, country's perspective on the international arena.

Further studies concern to study the socio-economic potential of the regions (human, information, resource (material), infrastructure, financial).

Planning for the strategic development of the regions should begin with the development of a strategic framework (platform). According to the methodology of regional development planning in Ukraine proposed by the European Union the appropriate strategic basis should be based on socio-economic analysis and SWOT analysis. The cluster analysis proposed in the study in particular allows to evaluate the degree of socio-economic development and complements the SWOT analysis of territories according to the criterion of inter-regional comparison.

Defining the benefits, vision and goals of harmonious socio-economic development must balance the priorities of both regional and national, both long-term and short-term in the context of scarce resources for development.

Meanwhile the main subjects of the regional strategy are the following groups: state and local self-government bodies, public organizations, enterprises of different forms of ownership, including municipal, regional state institutions, local educational institutions of different levels, representatives of local political parties, religious and ethical groups, trade unions, active locals, representing the interests of the public, the media.

Among the socio-economic resources of the region, an important role is played by regional infrastructure, which forms a kind of framework for the development of all sectors of the region's economy. For example, in the field of tourism infrastructure has a decisive role in forming the "framework" of the industry. Assessment of the state of regional infrastructure is not

sufficiently covered in the writings of economists, as approaches to the methodology of assessment differ.

Sotnichenko L.L. decided [23, p. 249] that the method of the region infrastructure potential estimation is based on the calculation of the integral indicator of the infrastructure potential growth (provided the use of statistics on the growth rate of the share of the transport industry in GRP, the growth rate of the infrastructure basic assets value, the growth rate of freight transport). This method of estimation is based in its calculated positions of the transport industry growth rate, without considering the development of other components of the region's infrastructure.

At the same time evaluation the development of infrastructure will help determine the prospects for the development of region's industries and areas.

Based on previous research [24, 25] future studies will assess the development of regional infrastructure by clusters.

Conclusions. The rating indicators are not sufficiently informative to develop a regional development strategy based on competitiveness. The use of cluster analysis methodology based on the proposed algorithm helps to understand the efficiency and weakness of regions, to find regions similar in socio-economic development. Developing a strategy for enhancing regional competitiveness should be based on the use of modern smart specialization concepts.

The obtained results allow us to formulate a multi-vector strategy for the development of the region, the formation of which will involve the interaction of business environment, government and innovative institutions.

The directions of future research are to substantiate the indicator of evaluation of the effectiveness of implementation of regional development programs and increase of competitiveness.

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AAA METHOD APPLICATION IN EVALUATING TEACHING STRATEGIES FOR DEVELOPING CRITICAL AND CREATIVE THINKING

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This contribution was created in connection with the project APVV-15-0368 Practical Training in the Centre of Field Didactics, the Field Didactics in the Centre of Practical Training.

Abstract: One of the most current issues in contemporary pedagogical theory and practice is suitable content definition in practical training of future teachers, along with the enhancement of their professional competencies in implementing teaching strategies for developing critical and creative thinking amongst children and pupils. Furthermore, the evaluation of these competencies is also at the centre of interest in didactics, pedagogy and educational psychology. The objective of this article is to point out a specific way to assess acquired professional competency level of pre-school and elementary pedagogy students, as well as lower secondary teachers of technical subjects in implementing teaching strategies for developing critical and creative thinking via AAA method, the in-depth video footage analysis of a single or several educational situations.

Keywords: key competencies, AAA method, teaching strategies, technical subjects, critical and creative thinking.

1 Introduction

It is the aim of contemporary teaching strategies to put the pupil in an active position within the teaching process, which should have a predominantly active character with an emphasis on developing communication and self-reflective skills¹. This is also the basis of several well-known teaching strategies which have been around for a long time, such as problem-solving teaching, project teaching, cooperative learning as well as some recently preferred methods: Interactive Lecture Demonstrations (ILL), Game Based Learning (GBL)^{2,3}, Peer Instruction, P&E method or Inquiry-based Science Education (IBSE). When applying teaching strategies, it is necessary to base these on suitable teaching objectives and content, school conditions as well as the pupils' age. Professional competencies of the teacher also play a vital role. Evaluation of these competencies, along with teachers' and pupils' results, has been the focus of educational politics of nearly every country. Class observation is one of the most popular methods of evaluating teaching competencies. Footage-based class observation, or a video-study⁴ is a type of inspection based on in-depth footage analysis of the whole lesson or a part of it. This concept has arisen from the practical shift in socio-humanistic sciences defined by 2 theses:

1. Practice is the basis of theory;
2. Theory has to be practice oriented⁵.

The principle of class observation consists of three methodological steps: annotation, analysis, alteration (AAA method or 3A method). Annotation is a brief description of the lessons or part of it, focused on the set objectives, topic, teacher and pupils' activity content, continuity of the curriculum and applied teaching aids. The analysis researches the teaching strategies applied by the teacher in order to achieve the set teaching goals, with the emphasis on developing critical and

creative thinking in pupils. Alteration is a hypothetical suggestion aimed to improve, modify or change the learning situation associated with discussion⁶.

As previously mentioned, educational process observation is an integral part of the undergraduate training for future teachers, as well as practicing teachers. The AAA method represents an innovative approach to class observation in terms of requirements arising from the valid Slovak Republic legislation.

2 Teaching Strategies in Technical Education

Technical education represents the area of education at the end of which pupils have acquired technical literacy and work skills. The teachers and their individual competencies, which "show in a specific way of managing the lesson and organizing pupils' work, i.e. strategies that focus on content processing by the pupils⁷ play a decisive role in this education, as well as the development of critical and creative thinking^{8,9}.

From the results obtained in the research¹⁰ carried out within the framework of the project APVV-15-0368 - Practical Training in the Centre of Field Didactics, the Field Didactics in the Centre of Practical Training, the objective of which was to map the strategy application for creative thinking in technical subjects, we specified the following strategies:

1. leading the students towards acquiring basic user skills in various fields of human activity,
2. using various teaching aids,
3. using various technical materials and equipment,
4. creating situations that induce the need for new designs, application of product creation processes in order to induce creativity,
5. inducing experimentation with ideas, materials, technology and equipment,
6. small group activity application,
7. developing the ability within pupils to take responsibility for individual or group project results,
8. informing pupils about current labour market requirements and recent technology development,
9. shaping the teaching content according to B. S. Bloom's taxonomy,
10. project teaching application,
11. problem solving application,
3. applying methods for developing creativity¹¹.

Our objective was to apply the AAA method in undergraduate training of pre-school and elementary pedagogy students, as well as technology students and provide them with this specific assessment of teachers' professional competencies in implementing appropriate teaching strategies with emphasis on developing critical and creative thinking in children and pupils. In the following lesson analysis, we focus on strategies applied within teaching technical subjects, namely experimenting with materials in pre-primary education and developing user skills when working in small groups in lower secondary education.

⁶ Boboňová, I. a kol.: *Aplikácia metódy hodnotenia kompetencií učiteľa*. Verbum: Praha, z.s. 2017, ISBN 978-80-87800-38-6.

⁷ Fenyvesiová, L., Duchovičová, J., Grofčíková, S. a Tomšík, R.: *Prefencie stratégií rozvíjajúcich kritické myslenie žiakov a budovanie stratégie vyučovania vyučujúcim*. In *Inovatívne trendy v odborných didaktikách v kontexte požiadaviek praxe*. Nitra: Pedagogická fakulta UKF, 2018, s. 521. ISBN 978-80-558-1277-9.

⁸ Slameto, U. *Developing Critical Thinking Skills through School Teacher Training 'Training and Development Personnel' Model and Their Determinants of Success*, s. 1: In *International Journal of Information and Education Technology*, 4/2, 2014.

⁹ Hemming, S. E. H.: *The Teacher's role in Facilitating Critical Thinking about social issues*, 263 p. 1997.

¹⁰ Valentová, M., Brečka, P., Depešová, J.: *Identifikácia kľúčových didaktických stratégií pre rozvoj kritického a tvorivého myslenia žiakov v predmete technika*. In *Stratégie kritického a tvorivého myslenia v odborných didaktikách výchovných predmetov*. 1. vyd. - Nitra: UKF, 2017. - ISBN 978-80-558-1227-4.

¹¹ Valentová, M., Brečka, P.: *Implementation of the Critical Thinking Strategies in the School Subject Technology: A Preliminary Study*. *TEM Journal*, Vol. 8, Issue 3, 2019, p. 998-1004.

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² Basler, J., Mrázek, M.: *Počítačové hry a jejich místo v životě člověka*. Olomouc: Univerzita Palackého v Olomouci, 2018. ISBN 978-80-244-5404-7.

³ Olvečký, M., Gabriska, D.: *Relationships between Game Attributes and Cognitive Abilities*. In *16th International Conference on Emerging eLearning Technologies and Applications (ICETA)*. 2018. DOI: 10.1109/ICETA.2018.8572254.

⁴ Janík, T., Slavík, J.: *Hospitační videostudie: anotace – analýza – alterace výukových situací (metodika AAA)*, in T. Janík, J. Slavík, V. Mužík, J. Trna, T. Janko, V. Lokajčíková, ... P. Zlatníček, *Kvalita (ve) vzdělávání: obsahově zaměřený přístup ke zkoumání a zlepšování výuky*, s. 217–246, Brno: Masarykova univerzita, 2013. Retrieved from http://didacticaviva.ped.muni.cz/data/PDF/Kvalita_Kap_8.pdf

⁵ Slavík, J., Janík, T., Jarníková, J. a Tupý, T.: *Zkoumání a rozvíjení kvality výuky v odborných didaktikách: metodika 3A mezi teorií a praxí*. In *Pedagogická orientace*, roč. 24, č. 5, s. 721-752, 2014.

2.1 Experimenting with Materials

ANNOTATION

The educational activity was carried out with students of the Constantine the Philosopher University in Nitra within the practical exercise Methodology of Work Education. The educational activity was represented by a simulation of a real methodological output for the area of Humans and the World of Work in pre-school conditions. The output was realized with pre-school and elementary pedagogy students. The teacher in the given output was also a student. The content of the educational activity was carried out with the emphasis on performance standards arising from the educational area Humans and the World of Work and the Sub-area Materials and Technology:

- name various natural materials,
- examine and research selected characteristics of the materials.

The educational activity began with motivational narration, which smoothly became a conversation between the teacher (student in the role of teacher) and children (students in the role of children). The teacher told the children a story about the problem that happened on his way to school. On the way he used a shortcut, which led through different types of terrain (gravel, sand, clay). He finished the story by asking a question: "What do you think, pupils, which part of the road was the muddiest? Which part of the road made my shoes the dirtiest?" The story resulted in a brief discussion through which the teacher examined the children's answers. The teacher also asked: "which of these materials (sand, clay, gravel) transmits water the most? Each child was able to express their assumption. The main part consisted of a simple experiment. The teacher announced they were going to play researchers and asked the pupils to note down their assumptions into their worksheets (Figure 1) which they then verified by experiment.

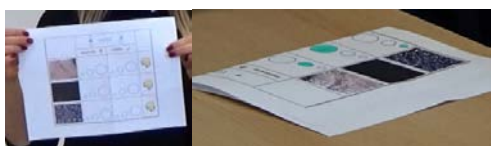


Figure 1. Work sheet

The teacher planned to carry out the experiment in groups, however, given the small number of children (5) in class, he suggested they do the experiment together. The children's task was to distribute 3 different natural materials mentioned in the story - gravel, sand, clay - into the 3 glass containers, based on the verbal instructions from the teacher. Afterwards, they poured the same quantity of water into each container using a measuring cup and observed which material transmits water the most.

In the next section, the task was to drain the water from each container, using a sieve, and observe what changes had happened to it ("Did the water change its colour? Has its quantity changed?" etc.). Once again, the teacher directed the pupils' attention to the experiment by asking suitable questions and emphasizing what they should be concentrating on in order to be able to formulate results.



Figure 2. Experiment results

From observation, the pupils figured out that the materials which left the water dirtiest were sand and clay as they dispersed in water. Furthermore, the least permeable materials of these were

clay and gravel (Figure 2). Afterwards, the pupils concluded that the assumptions they noted down into their worksheets were consistent with experiment results. Finally, by means of additional questions, the teacher led the pupils to summarize their findings. He evaluated the activity and praised the children, and their work.

ANALYSIS

The educational activity was carried out in the spirit of strategical experimentation, with emphasis on the goals that the teacher tried to achieve throughout the whole course of the educational component. The set goals were aimed at comprehensive development of the pupils' personality. Cognitive development was stimulated by working with worksheets, asking and answering questions, discussion and object manipulation. In addition, during the experiment children learnt about selected properties of natural materials and developed their skills. In order to achieve the development in the socio-affective area, the teacher provided everyone with the opportunity to express their attitudes, feelings and experience. The fulfilment of the objectives was particularly visible in the main part of the educational component. The educational activity consisted of a motivational, exposure, fixation and diagnostic part logically connected to one another.

In the introduction of the motivation part, the teacher induced the attention and activity in children with a motivational story about his way to school and a problematic task focusing on the permeability of materials. This introduced them to the issues and content of the educational activity. In a logical sequence, he proceeded to the main part, at the beginning of which he motivated the pupils again through the game of researchers. By a purposeful discussion, the teacher returned to the original issue of his way to school and dirty shoes and the children's task was to note down their assumptions into the worksheets. In this section, the teacher did not address the images in the worksheets, which could have ultimately led to misunderstanding.

Subsequently, the pupils had the opportunity to verify the correctness of their assumptions using a simple experiment with natural materials. This method led them to be able to draw conclusions and acquire new knowledge from the issue of permeability of selected materials based on their own experience and observation. The teacher encouraged the pupils (through questions and practical work) to actively participate in the learning process instead of being a passive observer and led them to conclude their own findings based on practical activities. Implementation of the experiment was accompanied by continuous instruction and guidance from the teacher. Pupil's task was to individually approach the table and distribute the same amount of natural material (gravel, sand, clay) into the 3 containers prepared. After that, they poured water into the containers using a measuring cup. By appropriately selected questions, the teacher constantly drew attention to the essentials of the materials and water. In the second part of the experiment, children were asked to pour the water out of the containers using a sieve and observe the material. At the end of the experiment, the teacher led the children to synthesis, i.e. to summarize the knowledge they had acquired throughout the experiment. Together they concluded that the most permeable material is gravel, at least permeable are sand and clay. The most soluble material is clay and the least soluble is gravel. Teacher repeated the question: "Which way should I have used in order to keep my shoes clean?" Significant part of experiments such as this is the confrontation of results and transfer of acquired knowledge into new situations and their use in everyday life. However, in this case, the teacher did not pay enough attention to this.

Worksheet evaluation was also omitted. The teacher only asked these (incorrect) questions: "Did you all have the right assumptions? Or "did anyone make a wrong guess?"

ALTERATION

The success of the experiment, and therefore, the quality of the gained knowledge, depends, among other things, on a purposeful

and systematic approach (1. correct formulation, issue identification, 2. hypothesis formation, 3. finding a suitable form of experiment, 4. realization of experiment, 5. comparison of results and hypotheses, 6. generalization of the results, formulation of conclusions).

Our recommendation is to put emphasis on correct terminology, not to include suggestive questions, but rather questions that support the ability to observe and classify. It is essential to apply correct, professional terminology, as it is gradually becoming a part of the children's vocabulary. Pupils at this age mimic not only the activities, opinions, but also the words, concepts and expressions of the teacher. With the correct terminology, pupils create the right ideas.

Furthermore, we recommend including activities for familiarising with different materials. Experiments in technical education are of great importance, given that pupils acquire new knowledge through their own activities and experience. According to Trna¹² (2005), experiments have a motivational effect, increase the transparency of the researched phenomenon, develop the ability to solve problems in pupils, and require simple technical equipment used in everyday life. The teacher can include activities for learning and observing materials e.g. using motivational discussion and questions such as: "What is the material? Where can we find it? What would happen if we did not have such materials? Could we replace it with other material? What is its use?" In order to activate higher thought processes, it is advisable for the teacher to create situations in which the pupils themselves can design their own process of verifying selected material properties. It would certainly be appropriate for pupils to have more materials in order to observe the properties, as well as more time to get as much new and interesting information about them as possible. It is also important that the teacher provides constant guidance and help. Failure to do so may lead to misunderstanding of the task or activity and thus failure to achieve the goal. For a better and more effective knowledge acquiring, we recommend paying more attention to the transfer of already acquired knowledge into everyday life examples. The teacher also omitted worksheet evaluation.

2.2 User Skill Development through Small Group Activities

ANNOTATION

The lesson was realized with 6th grade pupils of elementary school (age 11). The teaching strategies applied by the teacher were in accordance with the performance standards of ISCED 2, the sub-area Electricity, Electrical Circuits, from the educational area Humans and the World of Work for the 6th grade of elementary schools. The main objective of the lesson was for pupils to design a solar powered vehicle model according to the instructions (Figure 3).



Figure 3. Solar powered vehicle model

The teacher chose the following lesson structure in order to meet the educational objectives: motivational part, exposure part and diagnostic part. The fixation part was omitted for the exposure part. The teacher has planned and implemented the situations so

that pupils had enough time for realisation as well as validation of the model's functionality, which is an important prerequisite for the strategy of developing user skills.

The teacher intrigued the pupils and created a pleasant mood right at the beginning of the lesson. After the motivational demonstration of an all-constructed model and its functionality, the pupils expressed great excitement and interest in the task. Even more so, once the teacher informed them that at the end of the lesson, they will hold a solar powered vehicle model race in the school playground.

In the exposition part of the lesson, the teacher asked one of the pupils to distribute the kits amongst the class. Before the construction activity began, the teacher had established the rules and principles of safe work:

- extra attention was needed so that the pupils do not lose any of the kit parts, as they were very small, as opposed to the construction kits they normally work with,
- the kits included only Chinese instructions; however, this was not an issue since pupils were instructed to work according to the instruction images,
- the teacher also pointed out certain difficulties that the pupils may come across, as well as the way they should be addressed.

Pupils worked on model construction in pairs and according to the instructions (Figure 4).



Figure 4. Vehicle model construction

The teacher remained in the role of an advisor, intervening only in case pupils could not cope with something. Pupils worked independently without any major issues. At the end of the lesson, pupils verified the functionality of the constructed models as previously promised by the teacher – by taking them to the school playground and organising a solar powered vehicle model race. The activity was considered instructive and interesting by the teacher, as well as pupils.

ANALYSIS

The objective of the lesson was for the pupils to design a vehicle model according to instructions. The stated goal was cross-sectional, aimed at application of knowledge in the field of Electricity and Electric Circuits in the context of household work and home maintenance.

Based on performance standards from this area, pupils should be able to:

- assemble the model according to the instructions,
- carry out the model construction,
- verify model functionality, propose own functionality examination.

To implement these performance standards, teachers can apply building kit activities, as well as various design and handling activities in order to develop pupil's user skills.

The lesson was practical and experiential. The teacher applied narration in the motivational part, i.e. they verbally described the pupils' goal of assembling the solar powered vehicle. In order to enhance the pupils' interest in the activity, the teacher demonstrated the target model which the pupils were supposed to work towards. Although the topic of solar panels is included

¹² Trna, J.: Fyzika v jednoduchých pokusech (Physics in Simple Experiments). In *DIDFYZ 2004*. Information and Communication Technologies in Physics Education. Nitra (Slovensko): FPV UKF a pob. JSMF v Nitre, 2005. p. 167-171. ISBN 80-8050-810-0.

in Technology curriculum for higher grades, the teacher briefly and adequately explained to the pupils the principle of solar powered wheel movement, which is that if the solar panel is exposed to direct sunlight, the wheels start to spin on the solar vehicle model. The fact that pupils immediately began making suggestions and examining the model functionality under sunlight exposure proves that this activity was suitably interesting for them. There was laughter and good mood in the classroom. The teacher instructed one of the pupils to distribute the aids amongst all the classmates. Teacher also chose work in pairs which was a prerequisite for developing cooperation, mutual communication and tolerance. Prior to the activity itself, the teacher informed pupils about possible pitfalls in the construction, the knowledge of which facilitated their activity. The teacher also provided the pupils with information about some parts of the kit. Not too much direction was provided on the instruction manual, since the teacher assumed the illustrations were clear enough for pupils to be able to carry out the construction according to them.

The pupils worked in pairs, whilst the teacher approached them individually and constantly supervised, advised and directed the activity. At the same time, teacher constantly allowed pupils to verify the correctness of their design, by comparing it to the model vehicle used in the motivational part of the lesson.

At the end of the activity, the pupils verified the functionality of the constructed models by placing them in a direct sunlight by the window as shown by the teacher in the motivational part. At this point, the teacher used the space for development of technical thinking and ascertained the pupils' knowledge level of the unit Construction Basics. He formulated the questions in such a way that the pupils were able to come to the explanation.

Lastly, the models, as promised, were verified outside in the school playground, where a solar car race was held (Figure 5).



Figure 5. Functionality verification of constructed models

ALTERATION

The development of cognitive and psychomotor area of pupils' personality represents the basis of the Technology subject. However, currently there has been an issue with a bad state of many classrooms and workrooms as well as lack of materials for practical activities. Teachers must get very creative and resourceful in seeking suitable alternatives to activities for achieving the educational objectives and personal development of pupils despite unfavourable material or spatial conditions. Therefore, we consider the inclusion of activity focused on the construction of a solar powered vehicle model as a suitable alternative for developing pupils' assembling skills. The vehicle model brought joy, experience and above all a desire to work into the classroom. Not only boys, but also girls were interested in this activity. The activity was aimed at enabling pupils to:

- cooperate in model construction,
- build the model according to the instructions/manual,
- critically analyse the illustration content in the manual,
- carry out the actual construction,
- verify model functionality, apply personal functionality examination.

Based on the teaching strategies implemented by the teacher, it can be concluded that these objectives have been fully met.

Pupils worked with the kit according to the instructions and at after completing the assembly of the vehicle they had the opportunity to verify its functionality not only in the classroom, but also unconventionally on the school playground. The activity was therefore appropriately aimed to develop user (manual, assembly) skills.

However, in terms of complex personality development, the inclusion of practical activities should by no means eliminate the inclusion of methods for cognitive development. Therefore, it is recommended to create room for discussion on the topic or provide information that is closely related to it during practical activities, if the activity allows it. In this case, the teacher could have used the motivational method of updating the content of the curriculum in order to bring the content closer to the pupils with real life examples. Thus, through discussion, the teacher would have been able to include information previously acquired by the pupils to the curriculum at least marginally. (e.g. where they have seen solar panels, what they thought their purpose was, why they were called solar, etc.).

In relation to this issue, the teacher could have established a discussion on related professions and inform pupils about changes and development within technology as well as current labour market requirements. Our recommendation would be to discuss the professions that are related to the topic of solar panels or professions that require construction activities such as those that they had just performed with the vehicle model. Discussion could also focus on identifying pupils' opinions and relationships with professions and activities in relation to their personality traits.

The prerequisite for the best learning outcomes is activity evaluation, which is also the basis for further development of pupils, as well as teachers. Since evaluation was not carried out in this lesson, we recommend including at least a short discussion or open question method and point the pupils' answers towards self-evaluation.

3 Conclusion

The content of technical subjects is an integral part of the educational process as it complements general education with an important component necessary for one to find success on the labour market. Through practice-oriented work, pupils are supposed to distinguish and use technical materials, as well as the tools necessary for processing these materials. In addition, pupils are expected to apply planning, organizing, work evaluation, and work in a safe manner. The teacher plays an essential role in this process. Their task is to create situations and apply teaching strategies with enough technical materials and their practical application. Through these materials, pupils are supposed to develop their skills in various areas of human activity by observing, exploring, experimenting, and problem solving at an appropriate level. The education content is primarily aimed at developing practical skills, however, specific cognitive technical skills, such as technical, critical and creative thinking are also coming to the forefront.

In relation to the presented outcomes of the above mentioned project, our future goals will include the creation of tools for evaluation of future teachers' professional psycho-didactic abilities, particularly creation of tools for evaluating the outputs of practical training of teachers within various fields and their expert assessment by practice teachers or regional education representatives. In the final stage of this project we anticipate popularization of complex outcomes by making such methodological materials available throughout the academic community within the upcoming Centre of Practical Training.

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Primary Paper Section: A

Secondary Paper Section: AM

POSSIBLE SOCIAL, ECONOMIC AND SECURITY-POLITICAL CAUSES OF TERRORISM: VIEW OF EXPERTS FROM THE CZECH REPUBLIC

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Abstract: An integral part of the issue of terrorism is not only the consequences of committed terrorist acts which lead to subsequent security measures but also the causes of terrorist activities which determine the reasons why people are motivated for these activities. The paper focuses on the social factors (social inequality in society, citizen's standards of living, level of citizens education, religion), economic factors (economic performance of state, unemployment, inflation) and security-political factors (corruption, criminality, political instability, government ineffectiveness, war conflicts) which potentially generate future terrorist activities. The main target is to analyze opinions of 98 Czech respondents on importance of individual factors. Experts from military, police and academic institutions in the Czech Republic were selected as respondents for the questionnaire. Based on this analysis we made summarized statement about possible causes of terrorism. According the respondents, security-political area is the most important (especially current national and international war conflict), followed by social area (Islam religion) and economic area (youth and adult unemployment).

Keywords: causes, economic factors, multicriteria decision making, social factors, security-political factors, terrorism

1 Introduction

Terrorism is usually defined as a planned use of violence targeting a wide range public. The aim of terrorism is to attract attention and cause fear through which are achieved specific political, religious, or ideological intentions. It is possible to identify many factors in current society, which motivate people to terrorist ideas and then to practical actions. According to Meierrieks and Krieger (Meierrieks & Krieger, 2011) most of these factors come from security-political, economic, and social area.

The research performed by Li & Schaub (2016) and Odehnal and Sedlačík (Odehnal & Sedlačík, 2018) reported significant role of political instability as a factor of potential terrorist activity. Krueger et al. (Krueger, Laitin, Keefer & Loayza, 2008) even suggested political instability as a major cause of world terrorism. National and international conflicts together with political stability influence terrorist activity according to study of Campos and Gassebner (Campos & Gassebner, 2013). Study performed by Plamper and Numayer (Plamper & Neumayer, 2010) confirmed that national and international violence conflict are one of the most important determinants. Government inefficiency is another factor related to terrorist activity in a state as reported by Asongu et al. (Asongu S., Tchamyou V., Asongu N. & Tchamyou N., 2019), Li and Schaub (Li & Schaub, 2016) and Freytag et al. (Freytag, Krueger & Meierrieks, 2010). Study of Mullins and Wither (Mullins & Wither, 2009) suggested the possible positive relationship between criminality rate in state and terrorist activity. This link, however, was not uniform throughout the world but varied from country to country and over time. Stanojoska (Stanojoska, 2011) showed similar ambiguous results. Corruption is another variable where no consensus is. Boussiga and Ghdamsi (Boussiga & Ghdamsi, 2016) revealed a long-term relationship between corruption and terrorist activity. On other hand, Simpson (Simpson, 2014) obtained completely different results reporting no significant relationship.

Regarding the correlation between economic factors and terrorist activity, performed studies have come to different conclusions. Piazza (Piazza, 2013) focused on consumer prices fluctuations in relation to terrorist activities. He reported food price fluctuations and rapid food price increases to be significant predictors of terrorist activities. Shahbaz (Shahbaz, 2013) provided similar findings and showed that inflation affects terrorist activities. Anyway, study of Campos and Gassebner (Campos & Gassebner, 2013) pointed to different results reporting no significant relationship between these two variables. Unemployment in general is a highly statistically significant predictor of terrorist activity. Richardson (Richardson, 2011), who extensively analyzed economic factors related to the risk of terrorist activity, highlighted unemployment as possible important cause of terrorism. This finding is also supported by the study of Goldstein (Goldstein, 2003).

Blomberg and Hess (Blomberg & Hess, 2006) reported the level of economic performance of state to be associated with a higher number of terrorist attacks. These results are supported by analysis of Plamper and Neumayer (Plamper & Neumayer, 2010). On the other hand, Krueger et al. (Krueger, Laitin, Keefer & Loayza, 2008) suggested that there is no systematic link between economic performance of state and terrorism.

Factors from social area are other possibly important predictors of terrorist activities. According to Ola (Ola, 2018), citizen's social inequality is one of crucial causes of terrorism. Social inequality measures a lack of the capacity of a society to meet the basic human needs of its citizens, a lack of establishing the building blocks that allow citizens and communities to enhance and sustain the quality of their lives, and a lack of creation the conditions for all individuals to reach their full potential. Study of Goldstein (Goldstein, 2003) agreed with conclusions of Ola suggesting that high social inequalities produce isolation, poverty and aggression that may occur in terrorism.

Azam and Thelen (Azam & Thelen, 2008) reported positive relationship between level of citizen's education and terrorism. Drakos & Gofas (Drakos & Gofas, 2006), however, came to the opposite conclusion finding no significant link between these two variables. Krueger & Malečková (Krueger & Malečková, 2003) suggested that poor economic conditions of people are related to terrorism activities only weakly. On the other hand, Piazza (Piazza, 2011) in his study reported remarkably close link between citizen's standard of living and the number of terrorist attacks.

One of the worldwide-discussed topics related to terrorism is issue of religion. There are various opinions, findings, results, and conclusions. For example, Richardson (Richardson, 2006) in his book suggested an important role of religion as the cause of terrorism. Kosárová & Ušiak (Kosárová & Ušiak, 2017) pointed out that potential paths of radicalization are significant to understand the roots of Muslim rage and related terrorist threat. On the other hand, Tavares (Tavares, 2004) reported weak evidence between religion and terrorism.

This paper provides summary overview about opinions of 98 czech experts from military, police, and academic institutions on importance of possible predictors of terrorism activities.

2 Methods

In the first step, we selected experts specializing in security and terrorism issues from state authority's institutions, security and armed forces and academic area in the Czech Republic. We contacted them with a request to fill in the questionnaire described below. Respondents come from the Ministry of Defence, the Ministry of Interior, the Ministry of Foreign Affairs, and the University of Defence in Brno, Police Academy in Prague, Tomas Bata University and Technical University of

Ostrava. Data collection was proceeded in the year 2019. We received back 98 responds from 143 requests.

In questionnaire, respondents were asked to make a pairwise comparison, which of two selected factors is more important as predictor of terrorist activities. A five-point scale was used for each comparison with following meaning:

- 1) both factors are equally important (corresponding with intensity of importance 1 according Saaty 1987),
- 2) selected factor is of moderate importance over the other one (corresponding with the intensity of importance 3 according Saaty 1987),
- 3) selected factor is of strong importance over the other one (corresponding with the intensity of importance 5 according Saaty 1987),
- 4) selected factor is of extraordinarily strong importance over the other one (corresponding with the intensity of importance 7 according Saaty 1987), and
- 5) selected factor is of extreme importance over the other one (corresponding with the intensity of importance 9 according Saaty 1987).

The following factors from security-political, economic a social area were used for pairwise comparison:

- *social area*: citizens social inequality, level of citizens education (primary, secondary, tertiary), citizens standard of living and religion (Islam, Christianity, Hinduism/Buddhism)
- *economic area*: economic performance of state, unemployment (adult, youth) and inflation
- *security-political area*: criminality, corruption, war, and violent conflict (national, international), government inefficiency and political instability

First, respondents were instructed to decide on the importance of each area in comparison with other areas. Then, similar comparison was made for each factor from selected area with other factors included in the area. Some of the factors, e.g. religion, were also divided into second level factors, e.g. Islam, Christianity etc. Each of these second level factors were compared with other corresponding second level factors.

The Analytic Hierarchy Process (Saaty, 1987) was used for evaluation of results from questionnaires. Weights of compared factors were estimated using Row Geometric Mean Method as described by Saaty.

Paired t-test was used for determination of statistically significant differences among weights of individual areas and factors. Results with p-value lower than 0.05 were considered statistically significant. For this statistical calculation software *IBM SPSS Statistics 25* (IBM SPSS Statistics for Windows, 2017) was used.

3 Results and Discussion

Weights of compared areas and factors based on the preferences of respondents are, shown in Tab. 1. Based on the results from questionnaire, respondents determined security-political area as the most important, followed by social area and economic area. In security-political area, the respondents considered war and violent conflicts to be the most important risk factor of terrorism. In social area, all compared factors had approximately same importance for respondents. Between economic factors, the unemployment and economic performance of the state were considered more important than inflation. Subsequently, the differences in weights of factors were assessed using *paired t-test* (Tab. 2-8). It was proved that security-political area was statistically significantly more important than both social area and economic area based on respondents' opinion (Tab. 2). Simultaneously, social area was more important than economic area.

Tab. 1: Weights of compared factors

1. SECURITY-POLITICAL AREA (0.428)	
1. war and violent conflicts (0.397)	<ol style="list-style-type: none"> 1. <i>national conflicts</i> (0.510) 2. <i>international conflicts</i> (0.490)
2. political instability (0.175)	
3. criminality (0.165)	
4. government ineffectiveness (0.151)	
5. corruption (0.113)	
2. SOCIAL AREA (0.348)	
1. religion (0.274)	<ol style="list-style-type: none"> 1. <i>Islam</i> (0.413) 2. <i>Christianity</i> (0.249) 3. <i>Judaism</i> (0.187) 4. <i>Buddhism/Hinduism</i> (0.152)
2. level of citizens education (0.271)	<ol style="list-style-type: none"> 1. <i>tertiary</i> (0.408) 2. <i>primary</i> (0.346) 3. <i>secondary</i> (0.247)
3. citizens social inequality (0.230)	
4. citizens standard of living (0.226)	
3. ECONOMIC AREA (0.224)	
1. unemployment (0.462)	<ol style="list-style-type: none"> 1. <i>youth unemployment</i> (0.563) 2. <i>adult unemployment</i> (0.437)
2. economic performance of state (0.344)	
3. inflation (0.194)	

Source: own processing

Tab. 2: Statistical comparison of individual areas

	social area	economic area	security-political area
social area (<i>w=0.348</i>)	X	0.000	0.042
economic area (<i>w=0.224</i>)	0.000	X	0.000
security - political area (<i>w=0.428</i>)	0.042	0.000	X
<i>w – weight of the factor</i>			

Source: own processing

In security-political area, war and violent conflict was determined by the respondents as the most important factor (Tab. 3). The second most important factors were criminality, political instability, and government ineffectiveness. Although these three factors have different numerical values of the weights, these differences were statistically insignificant. Corruption was identified as significantly the least important factor. Similar weights were obtained for international and national war/violent conflicts (Tab. 4). Accordingly, no statistically significant differences were found between the importance of these types of war/violent conflict.

Tab. 3: Statistical comparison of individual factors in security-political area

	corr.	pol.	gov.	war	cri.
corruption (<i>w=0.113</i>)	X	0.000	0.017	0.000	0.000
political instability (<i>w=0.175</i>)	0.000	X	0.146	0.000	0.612
government ineffectiveness (<i>w=0.151</i>)	0.017	0.146	X	0.000	0.431
war and violent conflict (<i>w=0.397</i>)	0.000	0.000	0.000	X	0.000
criminality (<i>w=0.165</i>)	0.000	0.612	0.431	0.000	X
<i>w – weight of the factor</i>					

Source: own processing

Tab. 4: Statistical comparison of individual types of war and violent conflict:

	national conflict	international conflict
national conflict ($w=0.510$)	X	0.746
international conflict ($w=0.490$)	0.746	X
<i>w – weight of the factor</i>		

Source: own processing

In social area, all evaluated factors gained similar weight (Tab. 5). Accordingly, no difference between factors in this area proved to be statistically significant. There was found, however, significantly higher importance of primary and tertiary education as risk factor compared to secondary education (Tab. 6). Statistically highly significant difference in weights of factors were also found for individual religions (Tab. 7). Based on pairwise comparisons of importance of these religions as a risk factor of terrorism, religions can be sorted in following order according their importance: 1. Islam, 2. Christianity, 3. Judaism, 4. Buddhism/Hinduism.

Tab. 5: Statistical comparison of individual factors in social area

	religion	social inequality	level of education	standard of living
religion ($w=0.274$)	X	0.119	0.915	0.096
social inequality ($w=0.230$)	0.119	X	0.173	0.698
level of education ($w=0.271$)	0.915	0.173	X	0.124
standard of living ($w=0.226$)	0.096	0.698	0.124	X
<i>w – weight of the factor</i>				

Source: own processing

Tab. 6: Statistical comparison of individual types of education

	primary	secondary	tertiary
primary ($w=0.346$)	X	0.005	0.277
secondary ($w=0.247$)	0.005	X	0.000
tertiary ($w=0.408$)	0.277	0.000	X
<i>w – weight of the factor</i>			

Source: own processing

Tab. 7: Statistical comparison of individual types of religion

	Islam	Chris.	Jud.	Budd./Hind.
Islam ($w=0.413$)	X	0.000	0.000	0.000
Christianity ($w=0.249$)	0.000	X	0.001	0.000
Judaism ($w=0.187$)	0.000	0.001	X	0.002
Buddhism/ Hinduism ($w=0.152$)	0.000	0.000	0.002	X
<i>w – weight of the factor</i>				

Source: own processing

Between factors from economic area, unemployment was identified as the most important factor, followed by economic performance and inflation (Tab. 8). All these differences were statistically significant. The youth unemployment and adult unemployment obtained similar weight according respondents' opinions and difference between them remained statistically insignificant (Tab. 9).

Tab. 8: Statistical comparison of individual factors in economic area

	unemployment	eco. perf.	inflation
unemployment ($w=0.462$)	X	0.000	0.013
economic performance of state ($w=0.344$)	0.000	X	0.000
inflation ($w=0.194$)	0.013	0.000	X
<i>w – weight of the factor</i>			

Source: own processing

Tab. 9: Statistical comparison of individual types of unemployment

	youth un.	adult un.
youth unemployment ($w=0.563$)	X	0.071
adult unemployment ($w=0.437$)	0.071	X
<i>w – weight of the factor</i>		

Source: own processing

4 Conclusion

Based on our results, security-political area (especially national and international war and violent conflict) proved to be most important predictor of terrorist activity according experts from Czech Republic, followed by social area (especially Islam religion, primary and tertiary level of education, social inequality and standard of living) and economic area (especially overall unemployment). It is necessary to highlight the fact that our results originate only from subjective opinions of selected respondents. Moreover, only measurable economic, social, and security-political variables were used in this study. However, there are many possible causes of terrorism that are hard to measure, such as personal revenge, or mental disorder of potential terrorist. These individual factors were not evaluated in this study. This fact is another significant limitation of the study.

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Primary Paper Section: A

Secondary Paper Section: KA

PERSPECTIVES OF PERFECTING THE AURAL SKILLS OF SOUND ENGINEERS

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Abstract: Aural analysis training on various levels (dynamics, frequency, time) should be one of the basic training activities of all those who want to work with sound, not only of professionals but also of amateurs and students attending the Music and the Computer course at the primary level of art education. On the other hand, these are among the most undervalued skills, with inadequate accent on the necessity of their active and systematic training.

Keywords: sound, music, training

1 Introduction

Research on the contents of the education materials and curricula of the Music and the Computer course, published in the scientific monograph *Technology and Technical Devices in Music Education: Starting Points, Situation, Perspectives*¹, reveals that only minimal attention is paid to aural analysis. Despite the fact that, for practising sound engineers, their skills to analyse sounds are crucial. These skills can be fully developed only by active listening, whether to high-quality music recordings or to specific sounds, such as white noise or pink noise. It is important to note that the purpose of the development of aural skills is not to influence the level of artistic perception or to shape one's taste in music and sound. Its purpose is primarily to develop the technical sphere of aural skills, which are an indispensable tool to shape the taste and preferences of a sound engineer.

In practice, a sound engineer's auditory system and the technological background (the recording studio) he's working with become his musical instrument. Currently, technological advancement enables even students to acquire tools for editing sound and the age limit of using such tools keeps decreasing. Besides the technological equipment, therefore, it is increasingly important to develop abilities and skills, especially aural ones, too. The quality of developing aural skills, however, is directly connected to the technical conditions and requirements of playing audio recordings. In "local" conditions, the main problem in having an ideal listening environment is the absence of a suitable acoustic arrangement of the rooms and the lack of reproduction technology in the form of studio monitors.

Consequently, most students must use a more efficient and less costly solution – headphones. Although headphones play a role and have their place in professional studio work, for adolescents, they become the only option to listen to sound recordings in better quality than through cheap computer speakers. The phenomenon of the frequent and improper use of headphones by the young generation has been studied for over two decades. Several scientific studies² reveal alarming results because the vast majority of the respondents listens to music through headphones for an unreasonably long time at high volumes. Measurements in laboratories revealed that safe use of headphones, that does not damage the auditory system, should meet the requirement of maximum 80 dB of volume for a period of 8 hours.

Increasing the volume radically decreases the period for which the headphones can be used. If the ears are exposed to extreme load, they can get severely damaged. The most frequent damage, increasingly affecting young people, is tinnitus. It manifests itself in constant intense perception of a particular frequency independently from the sound environment one is exposed to.

This hearing impairment significantly reduces the quality of one's life and it is irreversible. Therefore, aural hygiene is one of the top priorities in the education of the younger generation.

Each training, aural, too, requires a systematic approach and compliance with certain mental hygiene standards. It must be kept in mind that the time dedicated to aural training must be limited. On the one hand, because of the acoustic pressure that the hearing is exposed to, and, on the other hand, because of the mental load during intensive focus on aural perception. The human auditory system gets tired relatively fast and the feeling of tiredness, often accompanied by frustration if the answer is incorrect, appears after only a few minutes of intense training. From this moment onwards, any training becomes an end in itself and highly counterproductive. Therefore, training must be divided into several training cycles that include adequate time for letting the auditory system rest when the person is not exposed to any aural load.

However, the training time to be followed cannot be clearly specified since it depends on several determinants. One of the most important ones is the nature of the sound source used for the training. In aural exercises focusing on the sound engineering field, two basic sound sources are used – pink noise and music. Pink noise, as a simple sound to perceive, is used primarily in training the analysis of the frequency spectrum, and a more complex form of sound, music, is analyzed only later. All the other training methods use predominantly musical sound.

When using pink noise, the auditory system is loaded several times more than in the case of music. The reason is that pink noise contains, simultaneously and in every time section, a uniform dynamic distribution of all the audible frequencies of the frequency spectrum. The advantage of this type of sound is that changes in the volume of the given frequency are clearly audible during the training. When using pink noise, the aural training time is only a few minutes per training cycle, which must be followed by a break. Training using musical sound can be carried out in more cycles because auditory perception is not loaded to a high extent.

The requirement for training aural skills to achieve efficient and high-quality work with sound has been present probably from the very beginning of the sound engineering profession. Initially, trainings took place mainly indirectly, during the work itself with sound. Sound engineers acquired the required aural experience only through long-term practice. There were no didactic procedures or exercises. The situation changed radically only with the emergence of digital technologies, which became available to the general public, too, not only to professionals.

A general availability of digital technologies started in the 1990s and it made the first ever complex education programme focusing exclusively on the development of aural skills possible. This education programme was Dave Moulton's book, *Golden Ears*³, from 1995. This didactically oriented publication was accompanied with 8 CDs containing exercises for the frequency spectrum, dynamic range, reverberation and delay. A shortcoming of these types of exercises is that all the changes in the samples are fixed, built into the audio recording, and the user cannot adjust the educational contents. Another problem is the presence of the unchanged musical samples, which become boring after some time.

More complex and user-friendlier interfaces could be achieved only by software solutions, which, however, could not be developed at that time due to a lack of technological tools. A significant change took place only with the development of the Internet and of websites, when several sites came into being that offered basic user interfaces for perfecting aural skills. Specialized sound engineering educational software began to be produced only a few years ago and its emergence was partly

¹ BREZINA, Pavol. *Technika a technológie v hudobnom vzdelávaní - východiská, stav, perspektívy*.

² FARINA, Adriano. *A study of hearing damage caused by personal MP3 players*

³ MOULTON, David. *The Golden Ears*.

inspired by the development of mobile devices such as smartphones and tablets. Currently, an enormous number of both Apple- and Android-based applications exist for these devices. However, the applications were developed mostly for entertainment purposes and do not have a more profound didactic purpose.

Specific, didactically oriented pieces of software for sound engineers began to appear only after 2010. Products by Harmann⁴ or TrainYourEars⁵ are designed in a sophisticated way and offer the users comfort in setting the exercises or choosing the sound source (noise, music etc.). V-Plugs was also among the first developers, and it later transformed its Mr. Soundman product into the extremely successful web interface Soundgym⁶, which became popular all over the world.

Today, there are several similar web applications and audio CDs that support this type of training. Not all are acceptable from a didactic aspect, though, and some are outdated. Corey⁷ defines the following five basic categories to be implemented into ear training:

- Frequency spectrum analysis – equalization
- Attributes of spatial perception – delay and reverberation,
- Attributes of the dynamic range – compression/limiting and expansion,
- Elements of the quality of an audio recording – distortion and noise,
- Processing audio materials – cutting and editing audio recordings.

A very important area, the ability to distinguish the timbres of musical instruments, is missing from the above division.

1.1 Frequency Spectrum

Theoretically, an undamaged human auditory system can perceive frequencies ranging from 20 Hz to 20,000 Hz. With age, the perceivable frequency spectrum, especially the high frequencies, gradually decrease. Frequency spectrum training, therefore, must take place in conditions that minimize the negative impact on the auditory system. The 20 Hz to 20,000 Hz frequency spectrum contains a very wide range of frequencies whose wavelengths move from 19.8 metres in the deepest frequencies to some 1.25 centimetres in the highest ones.⁸ Therefore, a set of loudspeakers in an acoustically well-adjusted room should be ideally used. The requirement to adjust the room acoustically is essential for the right identification of the audio frequencies during training. Ideally, the right acoustic solution would provide a frequency balanced course of the reproduced sound but, due to physical limitations, we can only come more or less close to this ideal in practice. Despite the fact that acoustic adjustments are aimed at creating a balanced, linear, course, we should bear in mind that the human auditory system does not perceive sound in a linear way.

The shape of the frequency curve of the human auditory system was identified by Fletcher and Munson based on their research already in 1933.⁹ The equal-loudness contour – as the two researchers named it – demonstrates the fact that the human auditory system is a lot more sensitive to the frequency band of medium and higher frequencies (1000 – 4000 Hz) than to frequencies in the bass band. Being aware of this fact can help trainees who undergo ear training in the frequency spectrum. Standard training to distinguish frequencies is carried out by increasing or decreasing the volume of the given frequency, which the percipient must be able to identify correctly. The aim

of the training is to acquire the ability to immediately identify the presence of prominent or dampened frequencies in an audio recording that should be treated in terms of volume. In general, it is simpler to train the identification of frequencies when increasing the volume. Therefore, it is recommended to approach the training focusing on the identification by turning down the volume only later on. Also, several types of curves (bell, shelf or pass) are usually used for frequency spectrum training. To comply with the didactic principle of graduality from simple to complex, it is good to start with the bell curve and include only a narrow frequency spectrum.

1.2 Didactic Tools for Frequency Spectrum Training

For many years, the only possible didactic tool consisted of sound recordings, which had a preset type of filter and a specific level of increasing or decreasing the volume for the given frequency. The number of questions was thus finite and, from the aspect of long-term training, quite dull. Software solutions, on the other hand, provide higher flexibility in setting the exercises and the principle of motivation becomes more lasting.

In this area, the most sophisticated training program is TrainYourEars. It enables the users to set the exercises from basic and simple ones (e.g. identification of a single frequency) up to extremely difficult ones, incorporating several frequencies into one question (one question may include all types of filters – bell, shelf and pass). By default, the program contains two types of sound for training – pink and white noise. However, users may choose any audio file in the wav, flac or mp3 format for training. The program is suitable for beginners, e.g. students of the Music and the Computer course, as well as for professionals or students of higher education programmes focusing on sound design. The whole user interface is now translated into Slovak, too.¹⁰

Besides standard computer programs, there are a number of web applications compatible even with mobile devices. This trend has been very popular in recent years and enables users to train their aural skills anywhere. The most sophisticated web application is SoundGym, which provides several types of training focusing on the frequency spectrum. These trainings, however, cannot be edited and function only at the difficulty levels preset by their developers. The whole concept of the application has the character of a computer game with a high-quality user interface in terms of graphics and with gradual levels up to difficult categories that are highly motivating especially for younger users. However, from the aspect of systematic and specifically didactically oriented education, the application cannot be used very well because the exercises cannot be edited.

1.3 Spatial Perception

Spatial attributes are defined by several elements. The most important ones include two types – delay and reverb of the audio signal. Both these elements are part of ear training and should be practised separately first. Even though both cases represent delaying the audio signal, they are defined in a different way. An audio signal that is delayed up to 50 milliseconds is called reverb and the human auditory system perceives the various elements in this time span as a uniform audio element. Behind the 50-millisecond limit, however, the auditory system distinguishes two or more independent audio elements.¹¹ Being aware of both types of delaying the audio signal and differentiating between them plays a very important role in making the right decision when editing sound. The basic types of reverb are chamber, hall and plate. Each has a different structure of the temporal distribution of the delay and the reverb elements, while the plate type, for example, does not contain the initial reflection (delay) element at all.

⁴ How to Listen! Harmann's How To Listen! [online]. [cit. 2019-11-26]. Available at: <http://harmanhowtolisten.blogspot.com/2011/01/welcome-to-how-to-listen.html>

⁵ Train your ears. Train Your Ears [online]. [cit. 2019-11-26]. Available at: <https://www.trainyourears.com/>

⁶ SoundGym. SoundGym [online]. [cit. 2019-11-26]. Available at: <https://www.soundgym.co/dashboard/index>

⁷ COREY, Jason. *Audio production and critical listening: technical ear training*. p. 8

⁸ STREICHER, Ron a F. Alton EVEREST. *The new stereo soundbook*. p. 2.4

⁹ HARVEY, Fletcher a Munson W. A. Loudness, Its Definition, Measurement and Calculation. p. 394

¹⁰ The translation of the program took place after an agreement with its developer as part of the KEGA 023UKF-4/2018 Extended Possibilities of the Application of Information and Communications Technologies in Music Education project.

¹¹ MOULTON, David. *The Golden Ears*. p. 58

Besides spatial perception, delaying audio signals can be used based on the various types of reverbs also for training the localization of the audio signal on a stereophonic base, a so-called stereo panorama. Thanks to the delay of the sound waves, the human auditory system can identify the location of the sound source in space and is extremely sensitive to these delays. If the listener sits in front of a stereophonic reproduction system at a central point, he or she will perceive even a 0.2 millisecond delay of the signal in the left or in the right speaker as a slight deviation from the central stereo base. The listener will perceive a 2-millisecond delay as a complete shift of the sound source in the stereo base towards the left or the right speaker.¹²

Spatial perception training is complex and difficult. Consequently, it is recommended only to advanced students. By using the right didactic reduction, however, this type of training and, especially, the localization training in the stereo panorama, could be handled even by students attending the Music and the Computer course.

1.4 Didactic Tools for Spatial Perception Training

In the past, similarly to frequency spectrum training, spatial perception training figured only in the Golden Ears book. Exercises focusing on delay and reverb had limited scope within the training, since they contained fixed time values. Dave Moulton stated that the most important time band for training delay is the interval from 30 to 70 ms.¹³ Currently, however, even values exceeding 500 ms play an important role in sound engineering, mainly due to the aesthetic requirements for sound in modern musical productions. Training reverb, therefore, should be oriented primarily towards defining the band of initial reflections and the time of the reverb, given in seconds. Currently, there is no sophisticated software application that would take into account the above specifications. The only application that offers a simplified training of delay and reverb is SoundGym.

At present, the only viable solution is to create one's own exercises by music software that contains delay and reverb effects. Based on the required level of difficulty, the exercises can be created in a complex or in a simple way. A simple basic exercise can consist of comparing two significantly different time values (e.g. 50 ms and 500 ms), with the user having to determine which one is longer, and which one is shorter. This interval can be gradually narrowed down, by which the difficulty to identify the difference increases. A complex exercise may set the task, for example, to determine the value of pre-delay, which is often used in reverb devices. The task of such delay is to separate the reverb from the original audio signal (e.g. to increase the clarity of singing or speech).

Reverb training can be carried out by any reverb plugin in which halls of various types and sizes can be set. In this aspect, the convolution reverb produced by Altiverb is an ideal solution, as it contains models of dozens of famous concert halls and other interesting halls in terms of sound. Being aware mainly of the duration of the reverb, in seconds, plays an important role in reverb training.

1.5 Dynamic Range

The dynamic range of an audio recording is specified in decibels of the sound pressure level (dB SPL). For the human ear, the range is limited by the auditory threshold at 0 dB SPL and by the threshold of pain at 120 dB.¹⁴ A standard conversation between people takes place at 60 dB SPL and the volume level when listening in a recording studio should be somewhere around 75 to 85 dB SPL.¹⁵ In the field of dynamic range, ear training focuses primarily on the acquisition of the ability to discern even

minimal changes in the volume level of the audio material. This ability is of key importance in making the right decisions when mixing music where the right volume level is to be determined for the various sound sources (musical instruments) to achieve a dynamically balanced audio image.

However, a trained auditory system is able to discern even dynamic changes of 1 dB SPL. Training must start with higher difference levels though. Usually, 3 dB (which represents a double intensity of the audio signal), 6 dB and 12 dB values are practised. Beginners start with the 12-dB level and decrease it gradually. Standard training to distinguish the volume takes place by comparing two audio signals, where the task is to determine which one is louder, and which one is softer.

Besides comparing the volume levels, specific skills to distinguish the settings of specialized instruments to adjust the dynamics, such as compressors, can also be trained in the field of dynamic range. The ability to identify the level of the ratio of the dynamic range compression of a sound recording, or to specify by ear the attack or the release of the compression, is also one of the key abilities of a qualified sound engineer. Highly specialized aural skills connected to dynamics include the identification of the distortion of the audio signal, which can also be trained with compressors or limiters.

1.6 Didactic Tools for Dynamic Range Training

So far, there is no specialized software that focuses on the complex and systematic training of perceiving volume levels or the behaviour of the various settings of compressors. In part, three exercises in the SoundGym application deal with training the perception of the dynamic range. Two of them focus on distinguishing volume levels and one on dynamic compression settings. Again, however, these are only games which cannot be modified, and didactically more complex exercises cannot be created.

Any digital audio workstation (DAW) which enables working in the multitrack mode can be used to practice changes in the volume of the audio signal. To compare and differentiate between two volume levels, it is enough to insert an identical audio material into two audio tracks and change the volume level to the required level. By playing both the tracks solo, the listener can compare and distinguish the differences in volume. In this method, automatic evaluation of the answers is absent, and they must be recorded manually.

The perception of the compression level of the sound can be practised in a similar way. Either we insert the required compressor in one audio track and the listener will determine the settings of the parameters of the compressor based on the heard sound or the compressor can be inserted into two tracks with the audio material and the listener will determine the differences in the settings. In this case of practising, it is again only a manual form of recording and evaluating the results.

The possibility to automatize all the parameters can help in creating tests with several audio samples – questions. In the audio tracks, several audio samples with various compressor settings or, in the case of practising the comparison of volume, with various settings of the volume level, can be arranged sequentially. Practising dynamic range and perceiving the complex changes in the parameters is meant primarily for advanced users. In the case of the Music and the Computer course at primary schools of arts, it is recommended to begin with simple comparisons of the volume of two audio samples and to progress to practising dynamic range compression subsequently.

1.6 Quality Elements and Cutting Audio Recordings

The availability of devices for creating and editing audio recordings has risen significantly over the past decade. Technological advancement and the affordability of the technologies enable even amateur musicians and music

¹² STREICHER, Ron a F. Alton EVEREST. *The new stereo soundbook*. p. 2.14 – 2.15

¹³ MOULTON, David. *The Golden Ears*. p. 58

¹⁴ MOULTON, David. *Total recording: the complete guide to audio production*. p. 25

¹⁵ KATZ, Bob. *Integrated Approach to Metering, Monitoring, and Leveling Practices*, Part 1: Two-channel Metering. p. 802-803

enthusiasts in home conditions to work with sound. The development trend of digital technologies focusing on creating and editing audio recordings, however, comes with some pitfalls. Firstly, they include the inadequate education of the users, which leads to an increasingly large amount of audio recordings of low quality from the technical aspect. From the aural aspect, we assess the quality of an audio recording based on the presence of audio elements that have a disturbing effect on the listener and degrade the overall impression from listening.

Such elements include mainly the digital distortion of the sound that occurs due to the incorrect setting of the sensitivity of the preamplifier during the recording or due to the incorrect use of tools in the post-production phase. Also, it includes the presence of noise and other interferences in the audio recording and, recently, the increased presence of strong reverb or even echo, which arises when the sound is recorded under acoustically unsuitable conditions (room, bathroom, classroom etc.). To eliminate the above elements successfully, an educated sound engineer must be able to identify all of them by ear. Since elimination takes place only in the post-production phase, it is an invasive and destructive intervention into the audio material. The right identification of the problem is the starting point for the right selection of the tools that intervene into the overall audio material during editing to the least possible extent.

Ear training to identify the disturbing elements in an audio recording must take place in acoustically suitable conditions, since these are often discernible only to a minimum extent and may vanish at the usual noise level of the surrounding environment. Headphones are therefore an ideal tool for this type of training because they minimize the influence of the surrounding noise and enable the listener to focus completely on the given elements. Identifying the disturbing elements of an audio recording is an extremely difficult process that requires experienced sound engineers. Consequently, it is recommended to start with their training only after enough time has been dedicated to exercises focusing on the frequency spectrum and the dynamic range.

Editing and cutting an audio material is directly connected to the identification and correction of the technical shortcomings of the audio recording. Today, the technical tools for editing sound make it possible to create cuts and remove unwanted sounds with high precision and in a non-destructive way. One can always return to the original material and edit the cutting in another way. The art of the right cutting of the audio material is based on long years of sound engineering experience. Training technically correct cutting is a process in which the sound engineer uses all the aural categories – the frequency spectrum, the dynamic range and the spatial attributes – reverberation.

To achieve the right cutting, the sonic continuity of the audio material must be respected, especially in the case of music and speech. Cutting materials recorded, for example, in a recording studio or at a concert of a symphonic orchestra in a cathedral with long reverb, offer various possibilities. In addition, the technical shortcomings of the audio recording often occur along with a signal that has an informational value (music, speech). In this case, cutting becomes a creative activity when the sound engineer, based on his aural skills, manages to identify the possibilities to replace such passages with another material in a way that does not affect the homogeneity and continuity of the sound or of the musical or verbal message. In the category of training the assessment of the quality of the audio recording, therefore, practising must be approached in a complex way as this is the most difficult form of ear training.

1.7 Didactic Tools for Training the Assessment of the Technical Quality of the Audio Recording

As mentioned above, the quality of the acoustic characteristics of the space plays the most important role in this type of training. Ideally, training should take place in a recording studio. If unfavourable acoustic qualities affect the efficiency of the training, it is better to use headphones. This variant is an ideal solution even for education at primary schools of arts where

several students are present at the lessons of the Music and the Computer course and, therefore, loudspeakers cannot be used.

There is no specialized tool yet for training the identification of an undesired distortion of the signal. Consequently, we must make use of the available technical solutions, such as audio plugins meant specifically for the simulation of distorted sound. Although these are primarily meant to create significant distortion and are used in the post-production phase for guitar sounds, they can be set even to minimal distortion. An audio plugin set in this way can be inserted into the audio track with the respective audio material and, by manual assessment, the listener determines whether he or she can hear the distortion of the signal.

We can proceed in a similar way also in the case of practising the identification of noise in a recording. Noise simulation can be generated with a sound generator which can be mixed to the required audio recording in the multichannel mode of a digital audio workstation. Subsequently, the listener can determine the presence of noise in the recording again by manual assessment. Ideally, training the right cutting of a musical recording should be done on audio materials that are the primary unedited recording containing all the disturbing elements. Such audio recordings are also available from educational websites such as mixwithmasters.com or puremix.net. These sites have archives of several multitrack projects of various genres and quality that are meant directly for practising editing and mixing.

Training should start with simple recordings of solo musical instruments or speech, with focus only on a homogeneous sound source. In the later phases of the training, multitrack recordings of pop bands or rock bands can be added, and advanced students can work on multitrack recordings of symphonic orchestras or choirs.

2 Conclusion

Perfecting the aural skills of those who want to work with sound on a higher level in terms of quality is one of the basic educational requirements. Currently, the diversity of the musical audio sources places large demands not only on sound engineers but also as on amateurs who work with sound only occasionally. The technical tools and their availability to a wide range of users offer enormous variability in terms of approaches and procedures in the post-production phase of audio recordings. The only common essence of all creative approaches to editing audio materials is the ability to assess the quality of an audio recording by ear, especially from the technical aspect.

Today, audio recordings are listened to on various devices, from loudspeaker sets up to mobile phones. Consequently, the demands on the aural quality of the audio recording keep increasing. Despite this trend, there are few tools to develop aural skills. And there are even fewer tools that are conceived in the right didactic way, so lecturers and teachers are left with alternative methods for ear training, which are difficult not only to prepare but also to implement.

Software with didactic focus on the development of aural skills, such as *Train Your Ears* or *How to Listen!* by Harmann, set the standard for modern education. Further, specially focused didactic software for training orientation in the dynamic range and the temporal spectrum should be developed based on these. Lastly, aural skills must be perfected even in terms of the technical quality of the audio recordings and there is no relevant educational software in this field.

The auditory system and its skills are the basic equipment and tool of a sound engineer to achieve his or her goals. These goals are mainly to achieve audio recordings of a balanced sonic quality, original sonority and technically correctly processed quality. Their training should therefore be one of the basic tasks in education.

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THE RESEARCH STUDY OF EMOTIONAL INTELLIGENCE BETWEEN ACADEMIC PROCRASTINATION AND EMOTIONAL INTELLIGENCE AMONG FEMALE UNIVERSITY STUDENTS OF HUMANITIES

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Abstract: The aim of the research is to find out whether there is a link between academic procrastination and emotional intelligence. 112 female college students of Ss. Cyril and Methodius University in Trnava participated/enrolled in the research. Two methods were used to achieve the goal – The General Procrastination Scale for Students and The Trait Emotional Intelligence Questionnaire for Adolescents and Adults. We found that increasing level of emotional intelligence reduces the degree of procrastination among students. As part of the research we investigated the predictors of procrastination between emotional intelligence factors. A significant predictor of academic procrastination was the factor of sociability

Keywords: academic procrastination, emotional intelligence , university / college students, metacognition / mutual connexion.

1 Introduction

The greatest development of studies aimed at procrastination occurred after Lay (1986) had conducted the research in which a questionnaire to detect the extent of procrastination had been created. A lot of experts have currently been dealing with the topic of procrastination (Slivíaková, 2007, Gabrhelík et al., 2006, Nuslauerová, 2004, Sarmány Schuller, 1999, Sulovcová, 2017, for example). In the population procrastination is manifested in the activities that individuals perform in everyday life. Inability to make decisions that can be manifested in decision making in important life stages belongs to general procrastination (Milgram et al., 2000). Procrastination is particularly evident in the academic surroundings (Lay, Silverman, 1996, Ferrarih, O'Callaghan and Newbegin, 2005, in Sulovcová, 2017). Academic procrastination refers to students who postpone their study duties until the last minute activities to complete (Ferrari, 2001, Gabrhelík et al., 2006, Chu, Choi, 2005). The attitude to the given topic has its roots in opinions of authors who consider the procrastination as a personal trait as well (Steel 2007, Schouwenburg 2004, for example). Salovey and Mayer (1990 in Shapiro, 1998) define emotional intelligence as an ability of a human being to accept not only their own emotions and feelings but also those of other people. Emotionally intelligent individuals are able to regulate, share, distinguish emotions, make use of the knowledge of their own emotions in their thinking and behaviour and this helps to emotional but also intellectual growth (Ferrari, 2001). There is a difference in academic performance between procrastinators and emotionally intelligent individuals (Ferrarih, O'Callaghan and Newbegin, 2005, in Sulovcová, 2017). In the case of procrastinators, due to time pressure and stress, it is impossible to achieve the desired goal which causes performance deterioration in the given task (Chu, Choi, 2005). On the contrary emotionally intelligent individuals should not be worse off because of emotional intelligence as a predictor of successful academic performance (Duran et al. 2006, Bachman, Stern, Campbell, Sitarenios, 2000). In their research, researchers found that the lower the level of emotional intelligence among respondents was, their tendency to procrastinate was higher and vice versa, the emotionally more intelligent individuals were less inclined to poor. If an emotionally intelligent individual finds himself in a situation where the task is unattractive, difficult to manage and hard to do, then he does not postpone the task later because he is able to respond to possible obstacles and is able to overcome them (Deniz, Tras, Aydogan, 2009). Based on the findings of experts, it is necessary to focus on whether academic procrastination can be caused by a reduced level of emotional intelligence (Deiz, Traz, Aydogan, 2009, Pychyl, 2009). Emotional intelligence involves factors that can predict the

formation of procrastination in students (Goleman, 2011). The main aim of the research is the fact if there is a relationship between academic procrastination and emotional intelligence. We are also focusing on researching of relation of factors of emotional intelligence to procrastination. In formulating further hypotheses we relied on researches of Deiz, Traz, Aydogan (2009) and Pychyl (2009) who had conducted the research to investigate the relationship between emotional intelligence and procrastination. Based on these researches we have hypothesized:

H1: There is statistically important negative connection between the level of emotional intelligence and procrastination.

Research question:

The following research question was formed on the basis of work done by Deiz, Traz, Aydogan (2009), who have also tried to find a predictor of procrastination.

RQ1: Which of the different factors of emotional intelligence predict procrastination.

2 The Methods

2.1 Research file

The research sample was selected by deliberate, intentional selection. The main task for selecting respondents, on the basis of which they were comparable, was that all participants were female students of the University of Ss. Cyril and Methodius in Trnava. Since we have identified a particular university where the research was conducted, the respondents involved were students of the first grade of psychology and teaching. All students took part in the research on a voluntary basis and completed the questionnaire methods in written form. After the students had agreed to participate in the research, we provided them with the necessary research information. We informed the participating students about their role in the research, the aim, the conditions of the research and we also guaranteed anonymity to them. The original number of respondents involved was 158 but due to missing or incomplete data, we decided to exclude 46 sample respondents. This means that the final research sample consisted of 112 respondents. Of the total research sample 112 were female ones. The age of the respondents ranged from 20 to 22 years old, thus all belonging into the category of early adulthood. The respondents were comparable in terms of age, socio - economic status and degree of their studies.

2.2 Research time Schedule

We started working on our research in March 2019. Questionnaire methods that were designed to get data were provided to students who were willing to participate in the research and who met the conditions we had set. Two months were required to collect the necessary data. After collecting the data, we processed them statistically and evaluated them subsequently.

Table No. 1: Research Schedule

Research Stages	March	April	May
Research organization	*		
Selection of methods and samples		*	
Goal formulation		*	
Data collection			*
Data processing			*
Evaluation			*

2.3 Research strategy and data collection

In conducting our research, we chose quantitative method of research. In order to obtain the data needed for our research, we have chosen a method of questionnaire. Through these methods, we were allowed to get more data for a relatively short time. The

questionnaire methods used in the research are focused on exploring academic procrastination and emotional intelligence. The content of the items included in the questionnaire was formed by statements aimed to detect the level of responses for female university students and also for the detection of demographic data.

2.4 The used methods

In the context of our research, two methods were used through which we investigated the rate of procrastination and emotional intelligence in the academic environment. The level of academic procrastination was being done by General Procrastinate Scale for students (Lay, 1986) and emotional intelligence was being searched by Trait Emotional Intelligence Questionnaire for adolescents and adults (Petrides, Furnham, 2006).

Procrastination Scale for Students - PSS is a new form based on General Procrastination Scale (Lay, 1986). Respondent answers 20 tasks which are associated to procrastination tendencies (Gabrhelík et al., 2006)

Trait Emotional Intelligence Questionnaire For Adolescents And Adults – a short version - TEIQue – SF was done by the authors Petrides a Furnham (2006). Using TEIQue – SP it is possible to detect emotional intelligence of people who are in the age range from 13 years old, it means they are adolescents and adults. In addition to the global emotional intelligence it is possible to measure its particular factors. The questionnaire is based on the model of emotional intelligence by Petrides and Furnham (2001). TEIQue – SF contains 30 items/questions that the respondent has to answer using the 7 – degree scale which is directed from the agreement / consent after a disagreement. We investigated the overall level of emotional intelligence and its factors, it means well – being, emotionality, self – control and sociability (Kaliská, Nábellová, Salbot, 2015).

2.5 Monitored variables and statistical analysis

As a part of the statistical analysis we were working with the following variables:

- procrastination,
- emotional intelligence,
- factors of emotional intelligence: well - being, self - control, emotionality and sociability.

After calculating the values of the individual variables, we recorded the data in the database which had been created by us in SPSS 20 program. In the program, the results were processed and analysed. Procrastination showed a normal distribution in women ($p > 0.13$). Emotional Intelligence showed a normal distribution in both groups and together as well ($p > 0.52$). The Pearson's correlation coefficient was used to test the hypothesis. Research questions were tested by using Pearson's correlations and linear regression analysis with the stepwise selection method.

3 The Results

Hypothesis No.1: There is a statistically significant relationship between intelligence and procrastination.

Between emotional intelligence and procrastination we recorded a moderately strong, negative and statistically significant relationship, $r = -0.326$, $p = 0.001$ (table 2). These results are supported by the hypothesis No. 1.

Picture No. 1: Relationship of emotional intelligence and procrastination

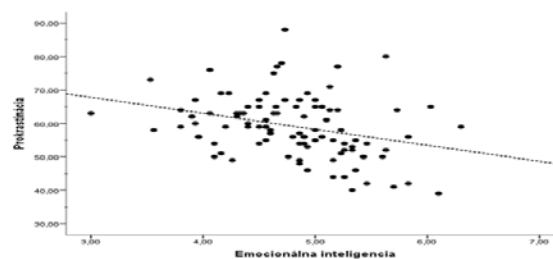


Table No.2: Relationship of procrastination and emotional intelligence

		Emotional Intelligence
Procrastination	PearsonCorrelation	-,326
	Sig. (2-tailed)	,001
	N	112

Research Question No. 1: Which of the individual factors of emotional intelligence predict procrastination?

Table No.3: Regression model of procrastination from sociability, self - control and emotionality

V	B	Beta	t	ΔR2	ΔF	P
S	-2,381	-0,289	-3,168	+0,084	10,04	0,002
S C	-1,713	0,125	-1,547	+0,020	2,39	0,125
E	-1,623	-0,121	-1,232	+0,013	1,52	0,220

(V= Variables inserted into a model, S=sociability, SC= self-control, E=emotionality)

Note. a after inserting into model to sociability. The model with sociability explains 8,4% variance in procrastination. The dimension of emotionality, $r = -0,211$, $p = 0,025$, sociability, $r = -0,289$, $p = 0,002$ and self - control, $r = -0,246$, $p = 0,009$ showed a significant, negative relationship with procrastination. In a linear model, in which the dependent variable was procrastination, we gradually inserted the predictors (significantly correlated dimensions of emotional intelligence) from the strongest to the weakest ones and were watching whether the addition of predictors increased the explanatory power of the model or not. The dimension of sociability significantly predicted the rate of procrastination in the negative direction, $F(1,110)$, $p = 0,002$, $R^2 = 0,084$ ($\beta = -0,289$, $\beta = -0,289$, $p = 0,002$).

Although self - control also significantly predicted procrastination $F(1,110) = 7,11$, $p = 0,009$, $R^2 = 0,061$ ($\beta = -2,746$, $\beta = -0,246$, $p = 0,009$), its addition to the model did not significantly increase the predictive value of the model, $\Delta R^2 = +0,02$, $\Delta F(1,109) = 2,39$, $p = 0,125$. The same was true of the dimension of emotionality that significantly predicted procrastination, $F(1,110) = 5,15$, $p = 0,025$, $R^2 = 0,045$ ($\beta = -2,840$, $\beta = -0,211$, $p = 0,025$), but its adding to the model of sociability did not significantly increase the predictive value of the model, $\Delta R^2 = +0,013$, $\Delta F(1,109) = 1,52$, $p = 0,220$. The results show that after excluding common shared variation between dimension of emotionality, sociability and self - control only sociability remains the significant predictor of procrastination, which explains in the dependent variable 8,4% variance.

4 Discussion

4.1 Interpretation of results

We have conducted the research in order to establish the existence of links between academic procrastination and emotional intelligence. In the first hypothesis we have argued that there is a relationship between procrastination and emotional

intelligence. We have confirmed that with an increasing amount of emotional intelligence, the rate of procrastination is on decline, it decreases. Our hypothesis was supported this way. It means that students who are emotionally more intelligent procrastinate less than students with lower emotional intelligence. In their research studies Deiz, Traz, Aydogan (2009) and Pychyl (2009) had researched the same conclusion as we have found – emotionally intelligent individuals do not tend to procrastinate. Goleman (1997) states that individuals possessing emotional intelligence have under the control their desires and are able to prioritize their duties to their own satisfaction. The ability to postpone one's own satisfaction leads to productivity and high performance (Goleman, 2011). According to Goleman (1997), emotional intellectuals can be motivated easily, and if they fail to perform a particular duty or task, they do not lose hope and believe that the situation can change and they can handle the task. It means that if an emotionally more intelligent person finds himself/herself in situations where the tasks, which must be accomplished, are challenging and difficult to manage, he/she does not postpone such tasks later in order to be managed later, but immediately responds to the tasks and the obstacles associated with them. Mikolajczak and Luminet (2008) claim that they do not look at the problem as something which is unattainable, unmanageable, but as a challenge. On this basis individuals activate all their abilities and possibilities to effectively deal with a problem situation. In our opinion this is mainly due to the fact that emotionally more intelligent people are inherently capable of better expressing, evaluating and using emotions, solving problems and thereby positively influence the quality of their lives (Orme, Bar-On, 2002).

There is a difference in academic performance between procrastinators and emotionally more intelligent persons. In procrastinators, because of lack of time and stress, it is impossible to achieve the desired goal which causes a deterioration in performance of the task. It is not the case of emotionally more intelligent individuals, they should not experience any deterioration of performance because emotional intelligence is considered to be a predictor of good academic performance (Duran et al. 2006). The reason may be that emotionally intelligent people perceive, evaluate and express their emotions correctly and can also use their own emotions a more productive way that is beneficial to them (Konrad, Hendl, 1997 in Deniz et al. 2009). Boyatzis, 2006, Daus, Ashkanasy, 2005 (In Hen, Goroshit 2010) through their research have confirmed that the ability to regulate and use emotions is linked to better academic performance. Emotionally more intelligent individuals are able to organize their time and process information in a better way than individuals with lower emotional intelligence (Bachman, Stern, Campbell, Sitarenios, 2000). From this fact we can conclude that even though one has a high level of emotional intelligence, he/she does not begin to procrastinate because he/she is able to organize effectively his/her time and schedule tasks. When dealing with such a situation, it is important for individual to evaluate the situation itself and also to evaluate his/her own abilities/skills. Based on the assessment of the situation and abilities, the individual chooses the coping strategy he/she will use. It is emotional intelligence which is affected by this assessment, meanwhile emotionally more intelligent people perceive the problem situation as a challenge rather than a threat (Mikolajczak, Luminet, 2008). We think that the assessment of one's own abilities has an important role in the life of an individual because he/she subconsciously chooses the tasks he/she knows that he/she is able to fulfill. This can prevent future failure from the task which is related to the prevention of procrastination. If we refer to procrastination as a coping strategy through which an individual avoids a problem or a role, we consider it to be a negative strategy. It is the level of emotional intelligence of a person which influences the choice of a coping strategy. Researches argue that emotionally more intelligent individuals avoid these maladaptive strategies, in our case procrastination. They use adaptive coping strategies (Petrides, Pérez-González et al., 2007, Petrides, Pita et al., 2007). Bar-On (1997) states that among the factors that form emotional intelligence belongs also the ability to cope with stress and

adaptability. Turkum (2002) proclaims in this context that if emotionally intelligent individuals are able to cope with stress and stressful situation, they also have the power to overcome problems in their lives while taking action in the future so that they no longer get into such a situation again. Therefore it is expected from students, who have the ability to cope with stress and adaptability, to be able to overcome problems in the school environment without interruption, it means – without procrastination (In Deniz et al., 2009).

In the research, we have also set out a research question that was focused on the detection of procrastination predictors. In the first research question we were focusing on the detection of predictors of academic procrastination in individual factors of emotional intelligence. Of all the factors of emotional intelligence (emotionality, sociability, self-control, well-being) only the factors of emotionality, sociability and self-control showed statistically significant negative relationship. Subsequently we examined which of the 3 factors would increase the predictive value of the model in which procrastination was a dependent variable. Only the factor of sociability, in the negative direction, increased the predictive value of the model.

Consequently, sociability as a single factor predicts procrastination of students. Different findings/conclusions had Deiz, Traz and Aydogan (2009) who as the only predictor of academic procrastination claimed a factor of adaptability. We believe that it helps the individual with a high rate of sociability, not to transcend the fact that he/she is able to establish contacts with others effectively. Kaliska and Salbot (2011) report that individuals with a high rate of sociability can listen to other people, regardless of the situation. We think it is this ability that can help an individual not to start to procrastinate. When an individual is unable to move on, take the time and manage to assigned tasks, instead of postponing them later, he/she is able to ask for help of persons in his/her vicinity, to make contact with them or to stay together in order to accomplish the task. For example, when designing a project at school, a procrastinator who is unable to cope with his mastery, he/she will postpone its processing later. However, a sociable person can associate with other persons and this cooperation forces him/her to a task and not to delay the problem but to confront it. Vašina (1999) states that positive social ties and social support allow an individual to adapt better to adverse conditions and respond to stressful situations.

4.2 Recommendation for practice

Currently there are several ways that are being used to reduce procrastination. Academic procrastination can be reduced through a counseling process, either individually or in groups (Gabrhelík, 2008). Ferrari et al. (1995) argues that a problem of procrastination is related to behavioral, cognitive, emotional components, and therefore it is necessary to focus on all three methods and combine the ones focused on these areas (Shouwenburg, 2004, In Gabrhelík, 2008). Schouwenburg (2004, In Gabrhelík, 2008) emphasizes that therapies should not be treatment-oriented but on reducing procrastination. If female students start to organize their time and responsibilities better, and if they enroll scheduled tasks for specified days or hours, it could help them and does not cause a chaos. Duties/obligations that are complicated or lengthy, take people as much as they can, and so they keep putting them aside later and devote themselves to duties that are less complex. It will come to the point when they are no able to fulfill the delayed task at all or they fulfill it only partially. Therefore, it is the essential thing that the most important or difficult tasks must be planned in the Schedule first, and only later less important and simple. However, it is important to keep and follow the Schedule. Our opinion is also supported by the author Ferrari (2001) who recommends a procrastinator to organize his/her time on the subject, for example by using "time management techniques" that include points such as: estimating time, organizational skills, writing notes, taking responsibility and many others.

4.3 Research Limits / Limitation

We have found several shortcomings after having done the research, and we consider it necessary to mention these limits.

The first of the research limits is the size of the research sample. Conclusions, findings to which the direction would have arrived, would be more accurate/ precise if the sample were larger. The number of respondents was not large enough to generalize the results of the research to the entire student population.

Another shortcoming of our research is the time it took to complete all three questionnaire methods. All questionnaires were communicated to the participants at once/ at the same time, which means that the number of all items was too high. The respondents filled in all items without a break, so after some time they could get tired. As a result of exhaustion, their attention and interest might have been reduced. It means that results can be distorted and not objective.

An important factor in filling the questionnaires could also be reduced motivation. It is possible that less motivated students were indifferent during the completion of the questionnaires and were not interested in attentive and truthful answers to the items. The limits of research are also questionnaire methods as they were self – assessment scales, students could respond socially desirable which significantly reduced the quality of the obtained data.

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Primary Paper Section: A

Secondary Paper Section: AN

THE RELATIONSHIP BETWEEN THE COMPONENTS OF EDUCATION COORDINATORS' SELF-PERCEPTION AND THEIR DIFFICULTY IN APPLYING THEIR PROFESSIONAL COMPETENCES

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Abstract: The aim of this paper is to analyse the relationship between the self-perception level among the education coordinators and their difficulty in applying their professional competences. Two research instruments have been used. The self-perception level among the education coordinators was measured by a scale questionnaire created by Božik (2016). Their difficulty in applying professional competences was examined using our own scale questionnaire. The internal structure of the questionnaires was analysed using the exploratory factor analysis. The first questionnaire consisted of 6 dimensions (positive evaluation of one's own work; limits of one's own work influence; attractiveness of the coordinator's function; perception of the coordinator's status; opportunity for further professional development; cooperation with colleagues). The second questionnaire consisted of 4 dimensions (preventive, diagnostic, cultivating, and consulting). The reliability of these dimensions was identified using Cronbach's Alpha; the first questionnaire achieved the value of 0.66 – 0.81 and the latter the value of 0.88 – 0.94. The research sample consisted of 215 respondents. Except for the "cooperation with colleagues" dimension representing the external factor in the development of coordinators' self-perception – which showed statistically significant, yet trivial positive correlation with the difficulty of implementing the preventive competency – all dimensions pertaining to the construct showed statistically significant positive correlation regarding their difficulty with applying their professional competences. Weak and stronger direct dependencies have both been identified.

Keywords: education coordinator, self-perception, professional competences, exploratory factor analysis

1 Introduction

Currently, an increase in problematic behaviour among pupils can be observed. Schools as professional educational institutions are trying to eliminate deviant behaviour of all kinds to facilitate personality development in pupils, and the education coordinators play an important role in this process. Research shows they are addressing a broad range of behavioural problems in pupils such as addictive substance abuse (Jinez et al., 2009; Zelinková, 2011; Emmerová, 2016), truancy (Kamarášová, 2012; Adefunke, 2015; Slovíková, 2015), bullying (Dulovics, 2014; Tłuściak-Deliowska, 2016), cyberbullying (Emmerová et al., 2015; Borzucka-Sitkiewicz & Leksy, 2018), different forms of violence (Niklová & Šajgalová, 2016; Bellová et al. 2019), etc.

Act No. 245/2008 Coll. on education and training (School Act), Section 130 specifies that the position of the education coordinators (formerly the prevention coordinator) is a part of the system of educational consulting and prevention system at primary and high schools. They are teachers who manage and guide prevention in a number of areas related to behavioural problems in students. Act No. 189/2019 Coll. (Act on teaching staff and vocational training employees as amended), Section 38 defines the tasks of the education coordinators at schools: besides coordinating the primary prevention of drug addiction and other socio-pathological phenomena, they also manage the cross-sectional topics in the school programmes of education, or informatisation and education using information and communication technologies.

According to Emmerová (2017a), the function of the education coordinator is assigned to the selected teacher by the headmaster for the period of 1 year based their voluntary interest, personality features, and specialised skills.

These factors are decisive, since the education coordinator should pay attention to primary prevention in all years of the primary and high schools; provide monitoring of problematic behaviour in pupils; manage the preventive activities, focus on actual risks, and make these activities entertaining by facilitating pupils' participation (Emmerová, 2017b).

Taking into consideration the aforementioned determinants participating in the selection of suitable teacher candidates for this position as well as the requirements regarding efficient primary prevention, it is obvious that the coordinator should be a person with a harmonic attitude towards themselves, pupils, their parents, colleagues, and teaching profession as such. According to Průcha, Walterová and Mareš (2009) who draw from Syřišťová et al. and Kariková (2011), the coordinator should be a self-confident person capable of objective self-assessment who develops their potential and can decide independently. They should also be able to manage stress, critically evaluate the reality, and adapt to existing conditions. The synthesis of these qualities could be referred to as the ability of professional reflection, which consists of self-perception, self-assessment, and behaviour (Hupková, 2006). These components play an important role in a teacher's personality and professional development.

Self-perception is considered of key importance – it is a cognitive structure in the person's consciousness that significantly influences their actions. It is the way an individual perceives themselves, and it also develops in relation to their surroundings (Kareem & Ravirot, 2014; Helus, 2018). Kosová (2007) claims that self-perception is based on the generalised idea of a person about themselves in terms of their own successfulness, which results from rational as well as emotional interpretation of different external evaluations. According to Ruisel (2008), self-perception belongs among the adaptive characteristics; it is a framework that helps us regulate our information processing, our motives, emotional states, and self-evaluation in terms of our skills. It is an important part of the personality component in every person. Through self-perception, the person distinguishes themselves from their physical and social environments, and realizes their own mental state. Meta-cognition enables them to efficiently communicate the work-related issues, establish relationships with other people, and facilitates the achievement of their goals.

Helus (1982) points out that self-confidence (in terms of being able to manage one's learning activities) is more important for pupils' school performance than their intelligence. Hamacek (1995) confirms this idea through his research; he proved there was a relationship between self-perception and school performance, as well as between self-perception and academic skills. Ugur's research (2015) also proved that pupils' self-perception changes according to the way they are perceived by their peers in terms of selected attributes. Changing self-perception in teachers may also prove a possible way to develop their potential as indicated by multiple pieces of research (Guskey, 1988; Zlatković et al., 2012; Yeung et al., 2014).

However, as Božik (2017a) claims, the job of the education coordinator is often taken by teachers who perceive it as a necessary evil to gain enough working hours. In some cases, this position is not even rewarded financially. On the other hand, there are teachers who take this job because they believe in its importance. Niklová's research of 2009 confirmed this. The problem is that the professional development of education coordinators is not followed systematically, and little attention is paid to whether primary and high school teachers are actually capable of doing the job, or the factors that influence them in it (Božik, 2017b).

Multiple internal and external factors influence self-perception in helping professions. The way these people perceive their job as well as their performance limits, and having sufficient self-confidence in unexpected situations are all important, which naturally relates to their self-awareness, the ability to analyse their weak points, and finding ways to improve them. The social environment in which those activities are performed cannot be overlooked either, but more importantly, factors such as professional prestige related to the position may heavily reflect

in their ability to cope with the changes in their self-perception in the context of what is expected of them.

Self-perception consists of dimensions, which produce a lot of questions among the education coordinators, and it is necessary for us to answer them in the context of helping professions. They need to understand themselves and gain the necessary self-confidence, but they also need to evaluate themselves and their actual performance positively. Průcha, Walterová and Mareš (2009) add the following representations to these dimensions: Me (Who am I really?); evaluation (Who should I be?) or direction (Whom would I like to be?); expression of power (What can I do? Whom can I influence?); and expression of the role (What should I do? What is my task?).

Although in theory, prevention in schools should be provided by a specialised employee such as the social pedagogue, with proper education and training (Hroncová & Emmerová et al., 2015), in practice, these tasks are being delegated to teachers (Fenyvesiová, 2015). However, we believe that education coordinators lacking special training during their university studies are nevertheless able to provide prevention of behavioural problems in pupils as well as to be social pedagogues. They are able to address addiction and provide prevention if they believe they are capable of performing all necessary activities. Eventually, their self-perception can be reflected in their difficulty in applying their professional competences.

Professional competences of the education coordinators are elaborated in the Prevention Coordinators' Professional Standard (2017). These competences are divided into 3 main areas: pupil, prevention activity coordination, and self-development. Each of these competences is described using the required knowledge and capabilities, which should reflect in practice. These professional competences could be summarised as tasks required from the education coordinators as the professionals providing prevention in schools, and taking responsibility for the process. Pjatková et al. specifies these tasks as follows (2014):

- creation of the prevention plan in cooperation with the headmaster; it is based on the current National Drug Fighting Programme;
- and includes the initiation and coordination of preventive activities in cooperation with the school management as an integral part of the educational process;
- providing school consulting in prevention of drug and other addictions;
- providing preventive and educational consulting to the pupils and their parents;
- monitoring and methodological guidance for preventive anti-drug education and providing information to the teachers (e.g. systematic evaluation of the development of pupils at risk of drug addiction);
- establishing contacts between the schools and other consulting or specialised facilities including non-governmental organisations providing prevention;
- special treatment of pupils at potential risk of socio-pathological development (e.g. pupils from environments at risk of social pathology; pupils from disadvantaged environments);
- informing the pupils and their parents about the accessibility of services specialising in prevention and elimination of addiction;
- cooperation with the school's educational counsellor and pedagogic-psychological consulting and prevention centre to provide methodological assistance in prevention;
- constant education, improving capabilities related to primary prevention in schools and the related measures (strategies, approaches, methods);
- performing professional reflection in order to satisfy one's professional needs;
- presenting a healthy lifestyle (the education coordinator should be an example for the pupils) and the validity and efficiency of prevention.

To reflect these theoretical starting points, the following research questions have been proposed:

- RQ1: Is there a statistically significant relationship between the positive evaluation of coordinators' own work and their difficulty in applying their professional competences?
- RQ2: Is there a statistically significant relationship between the limits of coordinators' own work and their difficulty in applying their professional competences?
- RQ3: Is there a statistically significant relationship between the attractiveness of the coordinator's function and their difficulty in applying their professional competences?
- RQ4: Is there a statistically significant relationship between the perception of the coordinators' status and their difficulty in applying their professional competences?
- RQ5: Is there a statistically significant relationship between the coordinators' opportunity for further professional development and their difficulty in applying their professional competences?
- RQ6: Is there a statistically significant relationship between the coordinators' cooperation with colleagues and their difficulty in applying their professional competences?

2 Research methodology

The self-perception level among the education coordinators was measured by a scale questionnaire created by Božik (2016). An explicit analysis of its components showed that both internal and external factors influence the coordinators' self-perception.

Of course, the extent to which the coordinators believe in themselves in their position as well as their belief in their ability to provide prevention and related activities (e.g. diagnostics, consulting) are very important. Other powerful factors include the way this position is perceived by the community of teachers (e.g. as a "punishment", no one wants to do the job, career advancement, etc.) and whether this position counts on professional development, which adds to the importance of education coordinators – optimal performance requires updating their knowledge and skills. Last but not least, the attitude of other teachers to the coordinator (underestimation, respect, perceiving the coordinator as an expert in addressing problematic behaviour in pupils) also plays its role. Pupils' parents should not be underestimated either – their perception of the school functions may influence pupils' attitudes towards the activities organised in order to support their personality development.

In the scale questionnaire, the respondents were supposed to express how much they agree with 26 statements using a 5-point Likert scale (completely disagree – disagree – neither disagree, nor agree – agree – completely agree). There were 13 negative statements, which were re-poled before the data were evaluated.

The second scale questionnaire (designed by the authors) identified how difficult implementing professional competences is for education coordinators. The questionnaire was based on the Prevention Coordinators' Professional Standard (2017). In all three areas – pupil, prevention activity coordination, professional development – cardinal activities necessary to prove that the coordinator has the respective competency were selected. These were integrated into the research instrument in the form of respective items and the respondents used a 7-point frequency scale to provide their answers (it is difficult for me and I need help – it is always difficult for me – it is very often difficult for me – it is often difficult for me – it is difficult for me sometimes – I rarely experience difficulties – I never experience difficulties). There were 28 items in total.

Rovňanová's scale (2015) was used; in her research, she focused on evaluating the subjective difficulty experienced by students of teaching and secondary and high school teachers in the application of their professional competences. The use of this scale was justified by the fact that the sensitivity of the process needs to be taken into consideration when evaluating how difficult the coordinator job is for the given person, sometimes it

is hard for the respondent to evaluate how often they actually experience the difficulties. Skalková (1985) claims that in this case, discrimination sensitivity needs to be considered in the respondents' answers.

The final form of the scale questionnaires did not undergo a pilot study, since the coordinators' self-perception questionnaire was already used in Božik's research (2017b) in Slovakia, and the difficulty-identification questionnaire was based on the Prevention Coordinators' Professional Standard, where the competences are already operationalised (see proving competences).

The complex questionnaire was administered to the respondents online. They were also given the opportunity to provide feedback regarding the research instruments used. This item helped us exclude the questionnaires of respondents who claimed to find it difficult to provide answers (agree/disagree with statements, determine the frequencies) or were unable to respond. At the end of the questionnaire, the respondents were asked about having answered the questionnaire before to exclude duplicates – a frequent problem in questionnaire research. No such respondents were identified.

The selection of respondents can be characterised as available. They were targeted via the e-mail addresses pertaining to primary and high schools listed on the webpage of the Slovak Centre of Scientific and Technical Information, in some cases the headmasters were addressed directly, and also via the e-mail addresses of the methodological-pedagogical centres. Data were collected from September to October 2018 (for one and a half month). The aim was generate as large a research sample as possible, because in the following months, this group of respondents is often targeted with other, often more demanding research.

The number of female respondents in the research file was greater ($n=187$; 86.98%) than their male counterparts ($n=28$; 13.02%). In terms of geographic distribution, most respondents in the research file were from the Prešov ($n=53$; 24.65%) and Košice ($n=33$; 15.35%) regions, followed by the Žilina ($n=27$; 12.56%), Banská Bystrica ($n=23$; 10.70%) and Trenčín ($n=24$; 11.16%) regions. The fewest respondents were from the Nitra ($n=21$; 9.77%), Trnava ($n=18$; 8.37%) and Bratislava ($n=16$; 7.44%) regions. Most respondents in the research file were primary ($n=164$; 76.28%) and high school ($n=35$; 16.28%) teachers. The respondents teaching at grammar schools formed the smallest group ($n=16$; 7.44%). 110 respondents consult the respective professional standard to find information on their professional competences ($n=110$; 51.16%). Almost half of them have no experience with the professional standard ($n=105$; 48.84%).

The information on the length of their professional practice was excluded eventually, because some respondents provided the length of their teaching practice instead of answering how long they have been working as coordinators, e.g. 30 years, which is obviously an incorrect answer as this job was only established in 2000. They were contacted via the e-mail addresses they voluntarily provided in the questionnaires to clarify the information. It turned out that some of them misread the question and automatically provided the length of their teaching practice as that particular question often occurs in research questionnaires. Therefore, the research instrument was adjusted and a demographic item was added to ask the respondents about both the length of their teaching as well as coordinating practice. Thus we prevented them from responding automatically without proper reading. The analysis of these two specific items showed that teachers with longer professional practice usually work as coordinators for a longer time as well (at least 2 years).

Identifying the questionnaire return-rate was deemed irrelevant. Since the questionnaire was distributed via schools, it was impossible to objectively determine how many respondents were really addressed. The total number of completed questionnaires that were returned was 268. During data evaluation, the final

number of usable questionnaires decreased to 215. The rest were excluded based on the assumption that respondents with short practice may not have yet had the opportunity to perform most of their professional tasks. Respondents with practice of (or shorter than) 1 year were excluded.

The internal structure of the scale questionnaire focusing on the coordinators' self-perception level was analysed using exploratory factor analysis instead of the confirmatory one, because its dimensions were selected without using factor analysis – the author allocated the items based on their contents (Božik, 2016) 6 latent variables were identified, which partially correspond with the questionnaire components proposed by the author. The main component method with the orthogonal Varimax rotation proved to be a suitable alternative in terms of factor interpretation (see Table 1). Standard variable exhaustion was identified (66.58%). The Bartlett's Sphericity Test refutes the hypothesis that the correlation matrix represents a unit matrix ($0.000 < 0.001$). The KMO Test for Sampling Adequacy (0.784) shows that factor analysis is a suitable method for analysing the collected data. The minimum factor loading per item to be included was 0.40. The factor loading was not supposed to exceed 0.40 in two or more factors at the same time.

In terms of exploratory factor analysis, 7 items were eliminated. First, an item with higher factor loading in 3 factors was excluded (My colleagues consider the function of coordinator an opportunity to make some extra money.). It was followed by an item with factor loading below 0.40 (Parents see the coordinator as a waste of money.). The third excluded item had factor loading higher than 0.40 in two factors (The cooperation with other school staff to provide prevention is very formal and impersonal). Three more items with extracted communality below 0.50 were also excluded (The school management helps draft the prevention plan.; The parents see the position of coordinator as a difficult and responsible one.; I consider the position of coordinator very useful at school.). Eventually, one more item that did not match the "opportunity for further professional development" factor was eliminated (The position of coordinator is allocated to a teacher with nothing better to do.). These steps proved correct as they increased the explained variability (66.58%) in comparison to the original state (60.97%).

The "positive evaluation of one's own work" factor consisted of items representing the coordinators' level of satisfaction with their job, or how much they believe they can arouse interest regarding the issue of addiction among the pupils. In this dimension, Cronbach's Alpha showed a value of 0.758.

The "limits of one's own work influence" factor consisted of items representing how much the coordinators believe that they can actually influence the pupils' behaviour in comparison to other factors such as their family and peers. In this dimension, Cronbach's Alpha showed a value of 0.757.

The "attractiveness of the coordinator's function" factor consisted of items representing how the coordinators perceive this position in terms of personality development and professional advantages. In this dimension, Cronbach's Alpha showed a value of 0.759.

The "perception of the coordinator's status" factor consisted of items representing the importance ascribed to the position of coordinator. In this dimension, Cronbach's Alpha showed a value of 0.697.

The "opportunity for further professional development" factor consisted of items representing the motivation for taking the coordinator job in terms of the accessibility of further training and establishing contact with experts in social pathology. In this dimension, Cronbach's Alpha showed a value of 0.809.

The "cooperation with colleagues" factor consisted of items representing the coordinators' assessment of their cooperation with other school staff. In this dimension, Cronbach's Alpha showed a value of 0.657.

Cronbach's alpha for the whole research instrument was 0.818.

Table 1: The components of self-perception in education coordinators (rotated factor loading matrix)

Items pertaining to individual factors	Factors						
	α	I	II	III	IV	V	VI
(I) Positive evaluation of one's own work	0.758						
I am objective and just when it comes to problem solving.		0.821	-0.158	0.156	0.017	-0.095	0.002
I can support my pupils when they face social pathology issues.		0.791	0.071	0.118	0.077	0.157	0.038
I am satisfied with the way the programmes and activities that I organize turn out.		0.646	0.265	-0.008	0.113	0.214	0.097
I can arouse enough interest in the topic of addiction among the pupils.		0.633	0.239	0.269	0.034	0.206	0.031
(II) Limits of one's own work influence	0.757						
I am really unable to manage severe cases of social pathology.		0.083	0.775	0.151	0.159	-0.061	0.018
I have little influence on the pupils in comparison with their parents.		0.119	0.772	0.061	-0.157	0.024	0.058
I have little influence on the pupils in comparison with their peers.		0.183	0.715	0.059	-0.091	0.057	0.209
I do not have the opportunity to influence the pathological behaviour in the pupils' parents.		-0.099	0.703	0.121	0.235	0.134	-0.088
(III) Attractiveness of the coordinator's position	0.759						
I perceive the position of coordinator as an opportunity for career growth.		0.044	0.082	0.829	0.071	-0.034	-0.144
For me, the position of coordinator represents an opportunity for personality development and self-actualisation.		0.174	0.203	0.728	0.041	0.313	0.049
The position of coordinator is merely a formal one.		0.155	0.044	0.669	0.066	0.161	0.329
I value the position of coordinator as much as I value teaching academic subjects.		0.374	0.184	0.549	-0.024	0.276	0.000
(IV) Perception of the coordinator's status	0.697						
I consider the position of coordinator underrated at school.		-0.088	0.029	0.078	0.814	-0.082	-0.012
My colleagues do not value the position of coordinator at all.		0.162	-0.020	0.089	0.761	0.037	0.187
My colleagues do not know what a coordinator actually does.		0.168	0.098	-0.053	0.695	0.234	0.245
(V) Opportunity for further professional development	0.809						
The position of coordinator gives me the opportunity to take courses and undergo training.		0.096	0.028	0.161	0.095	0.867	0.050
The position of coordinator gives me the opportunity to establish contact with experts in social pathology.		0.239	0.053	0.221	0.008	0.835	0.077
(VI) Cooperation with colleagues	0.657						
My colleagues often try to give me advice on prevention methods.		0.012	0.048	-0.070	0.126	0.021	0.835
The cooperation between the coordinator and other school staff fails due to different opinions on drug use.		0.072	0.096	0.151	0.189	0.083	0.795
<i>Eigenvalue</i>		2.51	2.47	2.24	1.93	1.87	1.63
<i>variance %</i>		13.22	13.00	11.79	10.16	9.83	8.58

In order to understand the internal structure of the scale questionnaire focusing on their difficulty in applying their professional competences, exploratory factor analysis was used (see Table 2). Four latent variables were identified. The main axis method with Promax rotation was used. Theoretically, individual factors may not be independent (Škaloudová, 2010; Kariková & Šimoniová-Černáková, 2016). Since the factors were correlated, the total value of the variable exhaustion cannot be determined after rotation. The Bartlett's Sphericity Test refutes the hypothesis that the correlation matrix represents a unit matrix ($0.000 < 0.001$). The KMO Test for Sampling Adequacy (0.937) shows that factor analysis is a highly suitable method for analysing the collected data. The minimum factor loading per item to be included was 0.40. The factor loading was not supposed to exceed 0.40 in two or more factors at the same time.

In terms of the exploratory factor analysis, 2 items with factor loadings higher than 0.40 in two factors at the same time were excluded (Coordinating cooperation with the educational consultant, form teacher, teaching staff and vocational training employees; Reflecting their own performance of the prevention coordinator's job).

The "preventive competence" factor consisted of items representing how difficult the performance of the job-related preventive activities is for the coordinators (from preparation to actual performance of preventive activities). In this dimension, Cronbach's Alpha showed a value of 0.936.

The "diagnostic competence" factor consisted of items representing how difficult the performance of the diagnostic process is for the coordinators (from using diagnostic tools to the actual diagnosis). In this dimension, Cronbach's Alpha showed a value of 0.896.

The “cultivating competence” factor consisted of items representing how difficult the performance of activities which help the coordinators identify with this role and job. In this dimension, Cronbach’s Alpha showed a value of 0.902.

The “consulting competence” factor consisted of items representing how difficult providing professional consulting is for them. In this dimension, Cronbach’s Alpha showed a value of 0.876. Cronbach’s Alpha of the research instrument as a whole was 0.961.

Table 2: The professional competences of education coordinators (rotated factor loading matrix)

Items pertaining to individual factors	Factors				
	<i>a</i>	I	II	III	IV
(I) Preventive competence	0.936				
Flexible response to offers from the external environment (project calls) and their inclusion in the plans		0.917	-0.026	-0.015	-0.104
Organisation of effective preventive strategies (guaranteed preventive programmes, peer programmes)		0.833	0.053	0.020	-0.156
Cooperation with specialised staff in drafting the school preventive programme		0.781	0.024	0.055	-0.087
Planning surveys to identify the needs of the given school or educational facility		0.675	0.162	0.018	0.008
Planning the prevention coordinator’s activity		0.667	0.056	-0.110	0.245
Evaluation of the prevention coordinator’s plan implementation		0.665	-0.087	0.027	0.192
Record-keeping		0.636	0.048	0.040	0.157
Evaluating the effectiveness of prevention based on pupils’ feedback		0.545	0.049	0.370	-0.081
Cooperation with the Centres for Educational and Psychological Consulting and Prevention		0.528	-0.054	0.148	0.062
Individual and group discussions with students regarding prevention		0.518	0.073	0.138	0.134
(II) Diagnostic competence	0.896				
Using the educational diagnostics tools to identify the specificities of a pupil’s social and cultural environment		0.048	0.871	-0.074	-0.035
Using the educational diagnostics tools to identify individual deviations in a pupil’s behaviour		0.140	0.863	-0.077	-0.108
Interpreting the results of educational diagnostics and drawing conclusions		0.078	0.785	-0.069	0.108
Proposing measures based on educational diagnostics		0.102	0.568	0.030	0.197
Identifying the issues in a pupil’s personality and social development		-0.221	0.564	0.381	-0.008
Identifying a pupil’s needs (e.g. based on personal contact or their own initiative)		-0.116	0.550	0.252	0.033
(III) Cultivating competence	0.902				
Being the expert in relation to pupils		-0.054	0.066	0.782	0.099
Being the expert in relation to the teaching staff and pupils’ parents or legal guardians		-0.038	-0.006	0.775	0.158
Presenting one’s own professional experience in specialised fora		0.001	0.213	0.660	-0.179
Using the feedback from the teaching staff as well as pupils for one’s own self-development		0.216	-0.060	0.640	0.001
Using different possibilities and forms of life-long learning		0.327	-0.134	0.617	-0.117
Cooperation with prevention coordinator at schools or in educational facilities		0.236	-0.004	0.535	0.067
Providing documents necessary to incorporate the methodological guidelines into the internal documents of the school or educational facility		0.306	-0.029	0.448	0.142
(IV) Consulting competence	0.876				
Providing consulting to pupils		0.005	0.017	-0.107	0.936
Providing consulting to legal guardians		0.109	-0.027	0.026	0.758
Providing consulting to the teaching staff		-0.109	0.040	0.146	0.753
<i>Eigenvalue</i>		<i>11.38</i>	<i>8.83</i>	<i>10.37</i>	<i>9.30</i>

The statistical significance of the relationships between the variables was verified at the significance level of 0.05. Non-parametric significance tests such as Spearman’s Correlation Coefficient and the Mann-Whitney U Test, since not all variables showed normal distribution within the file and its sub-files, which was verified using the Kolmogorov–Smirnov test ($p < 0.05$). As for descriptive statistics, arithmetic mean (AM) and median (Me) were used.

Based on the Spearman’s Correlation Coefficient results listed in Table 3, it can be stated that the questionnaire dimensions are mostly independent. A stronger direct dependency was identified between the “positive evaluation of one’s own work” and “attractiveness of the coordinator’s function” dimensions. The more the coordinators believe in their professional potential, which provides them with the background for providing prevention and assistance to their pupils, the more they perceive this job as a means of professional progress, and ascribe

a specific meaning to it. A stronger direct dependency was identified between the “opportunity for further professional development” and “attractiveness of the coordinator’s function” dimensions. If the coordinators’ professional development needs are saturated, their interest in doing the job increases. This is also supported by the stronger direct dependency between the “opportunity for further professional development” and “positive evaluation of one’s own work” dimensions. The more the coordinator can identify with their role through professional training, the more capable they feel to provide prevention with positive results.

The results in Table 4 show that there are statistically significant positive relationships between the dimensions of the questionnaire examining their difficulty in applying their professional competencies. Medium strong correlations are most frequent. Difficulty applying coordinators’ professional competencies is closely interconnected in terms of the

dimensions, which reflects the actual practice in different helping professions – successful application of the respective professional competences is determined by their complementarity. The difficulties with the application of preventive competence are determined by how difficult diagnosing pupils and prevention conditions are for the coordinators. On the other hand, the higher the quality of preventive activities (including diagnosing), the better the consulting provided by the coordinators, which also reflects in the way they declare their professionalism at school as well as outside of it, and last but not least, their personality and professional development efforts.

3 Research results

It seems that the more the coordinators believe in the effectiveness of their work and reflect its positive attributes, the

less their difficulty in applying most of their professional competences. Table 5 shows that except for the “cooperation with colleagues” component, the self-perception components in coordinators’ are in statistically significant positive relationships with the (lack of) difficulties.

Stronger correlations can be observed mainly between the “positive evaluation of one’s own work” dimension and their difficulty in applying all four competences; the “limits of one’s own work” dimension and their difficulty in applying cultivating, diagnostic and preventive competences; the “attractiveness of the coordinator’s function” dimension and difficulty applying preventive and cultivating competences, and finally, the “opportunity for further professional development” dimension and difficulty applying preventive and cultivating competences. The rest merely indicates direct dependencies.

Table 3: Intercorrelations between the self-perception dimensions in education coordinators

Self-perception dimensions in education coordinators		Positive evaluation of one’s own work	Limits of one’s work influence	Attractiveness of the coordinator’s position	Perception of the coordinator’s status	Opportunity for further professional development	Cooperation with colleagues
Positive evaluation of one’s own work	Spearman’s Rho	1.000	0.249	0.431	0.217	0.337	0.204
	p-value		0,000*	0,000*	0,001*	0,000*	0,003*
	N	215	215	215	215	215	215
Limits of one’s own work influence	Spearman’s Rho	0.249	1.000	0.265	0.127	0.131	0.107
	p-value	0,000*		0,000*	0,063	0,055	0,118
	N	215	215	215	215	215	215
Attractiveness of the coordinator’s position	Spearman’s Rho	0.431	0.265	1.000	0.182	0.401	0.137
	p-value	0,000*	0,000*		0,007*	0,000*	0,044*
	N	215	215	215	215	215	215
Perception of the coordinator’s status	Spearman’s Rho	0.217	0.127	0.182	1.000	0.139	0.267
	p-value	0,001*	0,063	0,007*		0,042*	0,000*
	N	215	215	215	215	215	215
Opportunity for further professional development	Spearman’s Rho	0.337	0.131	0.401	0.139	1.000	0.187
	p-value	0,000*	0,055	0,000*	0,042*		0,006*
	N	215	215	215	215	215	215
Cooperation with colleagues	Spearman’s Rho	0.204	0.107	0.137	0.267	0.187	1.000
	p-value	0,003*	0,118	0,044*	0,000*	0,006*	
	N	215	215	215	215	215	215

Table 4: Intercorrelations between the professional competences in education coordinators

Professional competences		Preventive competence	Diagnostic competence	Cultivating competence	Consulting competence
Preventive competence	Spearman's Rho	1.000	0.595	0.788	0.596
	p-value		0,000*	0,000*	0,000*
	N	215	215	215	215
Diagnostic competence	Spearman's Rho	0.595	1.000	0.625	0.549
	p-value	0,000*		0,000*	0,000*
	N	215	215	215	215
Cultivating competence	Spearman's Rho	0.788	0.625	1.000	0.627
	p-value	0,000*	0,000*		0,000*
	N	215	215	215	215
Consulting competence	Spearman's Rho	0.596	0.549	0.627	1.000
	p-value	0,000*	0,000*	0,000*	
	N	215	215	215	215

Table 5: Relationships between the dimensions in coordinators' self-perception and their difficulty in applying their professional competencies

Relationships between the coordinators' self-perception dimensions and difficulty in applying professional competencies		Preventive competence	Diagnostic competence	Cultivating competence	Consulting competence
Positive evaluation of one's own work	Spearman's Rho	0.437	0.412	0.472	0.357
	p-value	0,000*	0,000*	0,000*	0,000*
	N	215	215	215	215
Limits of one's own work influence	Spearman's Rho	0.324	0.397	0.441	0.193
	p-value	0,000*	0,000*	0,000*	0,004*
	N	215	215	215	215
Attractiveness of the coordinator's position	Spearman's Rho	0.411	0.252	0.366	0.211
	p-value	0,000*	0,000*	0,000*	0,002*
	N	215	215	215	215
Perception of the coordinator's status	Spearman's Rho	0.193	0.205	0.230	0.159
	p-value	0,004*	0,003*	0,001*	0,020*
	N	215	215	215	215
Opportunity for further professional development	Spearman's Rho	0.306	0.237	0.289	0.205
	p-value	0,000*	0,000*	0,000*	0,003*
	N	215	215	215	215
Cooperation with colleagues	Spearman's Rho	0.140	0.124	0.107	0.084
	p-value	0,040*	0,069	0,116	0,223
	N	215	215	215	215

4 Discussion

Self-perception or the development of an opinion about oneself is of both descriptive and evaluative nature (Řičan, 2010; Cakirpaloglu, 2012). It is important for education coordinators as well as for other helping professionals to keep developing their ability of professional self-evaluation. According to Kouteková (2017) it is one of the most important abilities teachers should possess, as it is necessary for learning new things as well as professional responsibility. Hrabal a Pavelková (2010) studied professional reflection in teachers; they claim that self-knowledge results from self-perception – a complex and dynamic process depending upon multiple factors and circumstances. It represents the means of getting satisfaction from one's work.

The function of self-perception is understanding oneself (Macek, 2008). Self-assessment plays an important role as it represents one's emotional relationship towards themselves (Blatný, 2003) closely related to their self-respect. A teacher with positive self-assessment is able to improve themselves and compensate their weaknesses and according to Hartl & Hartlová (2010), it also reflects in their self-respect and self-confidence.

The research identified statistically significant stronger positive relationships between the "positive evaluation of one's own work" dimension and their difficulty in applying all four of the aforementioned professional competencies. It seems that the demonstrated dependency strength between the dimensions does, in fact, correspond with the reality. All self-assessment is determined by heteronomous assessment (Kosová, 2002; Slavík, 2018). Only a person who has internalised the assessment criteria can assess their own performance optimally. All

participants of the educational processes taking place at the school are judging the coordinators. However, their self-assessment is corrected and modified through the interactive cycle of assessment (Kouteková, 2015) in which different subjects enter. The performance measures are being constantly restructured.

Gavora and Majerčíková (2013) emphasize that besides professional competences, the teacher's self-perception, i.e. the idea they have about themselves as a professional in teaching and upbringing, is also very important. In our opinion, this claim also applies to education coordinators. Whether they perceive themselves as prevention experts largely depends on their ability of self-reflection in terms of their school activities, but also on their ability to process the feedback from their surroundings (colleagues, pupils, parents).

Božik (2017b) states that self-perception is a set of opinions an education coordinator has about themselves. Satisfaction with one's work or its lack thereof also deserves attention. Self-perception as a complex of ideas someone has about themselves incorporates stylised personality characteristics (Wiegerová et al., 2012). It is natural, because our primary purpose is to make others perceive us as a professional. It relates to the fact that there is a statistically significant stronger positive relationship between the "limits of one's own work" and applying cultivating, diagnostic, and preventive competences.

Self-confidence as the belief in one's own potential helps us set realistic goals. It represents positive self-perception (Rogers, 2014) – it is not self-conceit that distorts our self-image. Helping professionals in the school environment must be aware of certain limitations – as in every competence profile, but they should also believe that the activities they organise for pupils create a

broader influence, crossing the border of the school. The research by Ross and Bruce (2007) indicates that teachers who perceive themselves as capable professionals like experimenting and are show more endurance in overcoming obstacles.

The way education coordinators approach the activities pertaining to their position also depends on the incentives such as attractiveness of the job at schools and teachers' perception of the job. Our research identified a statistically significant stronger positive relationship between the "attractiveness of the coordinator's function" dimension and their difficulty in applying preventive and cultivating competences. There is a statistically significant weaker positive relationship between the perception of the coordinators' status and their difficulty in applying their professional competences. These findings can be explained by the fact that the position of coordinator may be desirable, because the teacher-coordinator gets not only to teach students (their main task), but also to influence their attitudes to substance and non-substance addiction, self-care, and behaviour towards other pupils. In further research it would be desirable to include control variables and pay attention to the way teachers become coordinators, who made the decision, and how they responded to the assignment.

Zemančíková's research of 2012 provided interesting findings – it showed that neither the management, nor the teachers have proper knowledge on what social pedagogues actually do. The question about their status at schools arose. We believe that the coordinators are in a similar situation.

Approximately half of the respondents in the research file stated they did not use the Prevention Coordinators' Professional Standard to learn about their own professional competences. Respondents who use the Professional Standard to navigate their job achieved statistically significant better results in the "positive evaluation of one's own work" dimension ($p=0.019$; Mann-Whitney U test=4735.000; AM=3.82; Me=3.75; AM=3.70; Me=3.75), "limits of one's own work" ($p=0.000$; Mann-Whitney U test=3850.500; AM=3.00; Me=3.00; AM=2.63; Me=2.50), "attractiveness of the coordinator's function" ($p=0.007$; Mann-Whitney U test=4547.500; AM=3.60; Me=3.75; AM=3.29; Me=3.50) and "perception of the coordinator's status" ($p=0.013$; Mann-Whitney U test=4656.500; AM=3.07; Me=3.00; AM=2.79; Me=2.67).

They also achieved statistically significant better results in their difficulty in applying the preventive ($p=0.000$, Mann-Whitney U Test 3903.500; AM=6.05; Me=6.15; AM=5.51; Me=5.80), diagnostic ($p=0.000$; Mann-Whitney U test=3811.500; AM=5.40; Me=5.50; AM=4.92; Me=5.00), cultivating ($p=0.000$; Mann-Whitney U test=3982.000; AM=5.66; Me=5.86; AM=5.13; Me=5.43), and consulting ($p=0.030$; Mann-Whitney U test=4799.500; AM=5.99; Me=6.00; AM=5.71; Me=5.67) competences.

In supporting positive self-perception in coordinators it is necessary to check whether they are correctly informed about their tasks at school and about their exact professional competences. If these are not properly specified, difficulties arise. This also apply to other teachers who are not coordinators themselves, but their perception of the job significantly influences the way the prevention coordinator at their school perceives himself.

A statistically significant stronger positive relationship was identified between the "opportunity for further professional development" dimension and their difficulty in applying preventive and cultivating competences. Understandably, actually using the opportunity for professional development should help the coordinators resolve the problems arising in their practice, but it is equally important to emphasize the necessity to undergo further training, because it also influences whether they perceive their job as meaningful as well as their self-perception. Participating in specialised training can be a means of professional reflection (Auger & Bouchariat, 2005), which provides an opportunity to gain a different perspective on the

educational reality and work with pupils. We identify with the experts' opinions on pedeutology (Ellington, 2000; Kasáčová, 2014; Pollard et al., 2014; Kosová & Tomengová et al., 2015) who state that today, teachers cannot thrive without self-reflection and continuous education. Korthagen & Wubbels (2011) performed a long-term research that showed that teachers who perform professional reflection are interested in continuous self-improvement, more satisfied with their job, and believe in their professional skills more. It is one of the self-perception levels. These two findings can be also applied to coordinators and their job.

No statistically significant relationship was identified between the "cooperation with colleagues" dimension and their difficulty in applying their professional competences. There is a visible trivial positive correlation between this dimension and their difficulty in applying preventive competence, but no relevant conclusions can be drawn from it. It is surprising, given the fact that the respondents achieved the highest scores in this particular dimension (AM=3.93; Me=4.00), the "positive evaluation of one's own work" dimension (AM=3.76; Me=3.75), "opportunity for further professional development" (AM=3.74; Me=4.00). However, the question about the nature of this cooperation arises: if a coordinator is to apply their professional competences with fewer difficulties, it is not enough if their teacher colleagues respect them and the prevention methods they are using or if they share the attitude towards drug use. This dimension should be extended by more items or include a control variable in the questionnaire to identify what is the nature of cooperation between the coordinator and the teachers at school. Items aimed at identifying the school's attitudes towards prevention and its necessity as well as what kind of preventive programmes are being implemented there most frequently should also be added. According to Baginová and Belušková (2014), prevention effectiveness depends on the overall school philosophy, which guarantees a safe environment, promotes a healthy lifestyle, and focuses on the pupils.

As for the weaknesses of this research, the method of finding respondents for the research file should be improved. Available selection is a method limited in certain ways. The first limitation is that the research results cannot be generalised in a valid way and applied to the coordinators working at primary and high schools in Slovakia. Further research is desirable in the area. On the other hand, 215 of the coordinators represents 215 schools that participated in the research, which is a robust sample. Based on our possibilities, we opted for the available selection which means that more coordinators convinced that this job is meaningful may have participated in the research.

Based on the difficulty scores achieved by the respondents (AM=5.78; Me=6.00), diagnostic (AM=5.17; Me=5.33), cultivating (AM=5.41; Me=5.57) and consulting (AM=5.86; Me=6.00) competences, it is assumed that mainly coordinators with longer practice participated in it. The scores in the dimensions indicate that these coordinators do not experience that much difficulty in applying their professional competencies. This may have resulted in the fact that there were no statistically significant stronger correlations between the self-perception components in coordinators and their difficulty in applying their professional competencies. Experience with school prevention and related activities was not observed as a variable, which nevertheless influenced the dependency strength between variables in both research instruments. This distortion may also be explained by the fact that professional standards expose the teachers' (coordinators') weaknesses more than formative aspects of performance evaluation. This is pointed out by Kyriacou (2012) who argues that the lists of professional competences tend to emphasize the final aspect of teacher's work. Respondents may have been reluctant to disrupt their self-images, although that is what happens (Korthagen & Wubbels, 2011) in terms of professional reflection, when they were supposed to state how difficult it is for them to apply their professional competencies.

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Primary Paper Section: A**Secondary Paper Section: AM**

INFLUENCE OF INNOVATION ACTIVITIES ON CSR OF SMES IN SELECTED CEE COUNTRIES

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Abstract: This contribution deals with the concept of innovation and its influence on CSR. It attempts to prove by means of empirical research that SMEs that demonstrate high engagement in the area of innovations have a higher tendency to engage also in CSR. Research was conducted in SMEs in the CEE region, in Austria, Czech Republic and Slovakia (n=607). Empirical data were collected through questionnaire. Statistical evaluation of empirical data was done via Pearson's Chi-square test and Cramer's V coefficient. This article is an addition to literature at two major levels. First, it attempts to explain how innovation and CSR are interconnected and through statistical analysis proves innovation to be one of the main CSR drivers. Second, it provides empirical data about SMEs in less researched CEE region.

Keywords: CSR, innovation, sustainability, business strategy, SMEs.

1 Introduction

Innovations and CSR have become important topics for both researchers and managers and a crucial part of core competencies for successful businesses. Even though both topics are not new, foundations date back to 1950s (Barnard, 1958; Carroll, 1999; Elkington, 1994), they regained a significant attention of many authors (Baumgartner, Ebner, 2010; Nidumolu et al., 2009; Porter, Kramer, 2011; Visser, 2010) around a decade ago, mostly after the economic crisis of 2008. Innovations have been seen by scholars as one of the key drivers of economic growth (Grossman, Helpman, 1993; Romer, 1990) and CSR as a challenge that can be transferred to a business opportunity (Rexhepi et al. 2013). In the past decade, there have been numerous studies that have tried to prove the positive impact of CSR on company's financial performance and growth. Some of them show positive relationship (Lev, Petrovits, Radhakrishnan, 2010; Margolis, Walsh, 2003), however, some of them also negative (Gossling, 2011) or the researchers see influence of other intangible factors that might modify this relationship (McWilliams, Siegel 2001; Surroca et al. 2010). One of these elements that could have substantial impact on firm's performance could be innovation. Innovation is by certain scholars seen as an intermediary or a moderator between CSR and increased financial and economic performance of a firm (Anser, Zhang, Kanwal 2017; Marin, Martin, Rubio, 2016; Ruggiero, Cupertino, 2018).

Recently, a relationship between innovation and CSR has come into research focus (Bocquet et al. 2014; Guerrero-Villegas et al. 2018; Marin et al. 2016; Martinez-Conesa et al., 2017; Mithani, 2017; Wu et al. 2018). Innovation and CSR have not become considered as an important area for study only by researchers but also a significant topic for companies, governments, third sector and also customers. Innovation is a critical factor for economic growth, it is one of its main catalysts and it is inevitable for companies not only for their expansion but also for their mere survival on today's global and demanding markets. On the other hand, CSR is still not correctly perceived and understood by many businesses. There still exists that common fear that engaging in CSR might compromise the profitability (Baumgartner, Ebner, 2010; Hwang, Kandampully, 2015) or there are substantial differences in views of firms and their managers on this issue (Pedersen, 2010). It is not just company's philanthropy and mitigating the negative results of their business activities as it is still often seen by many companies and wide public but it is the way how the business activity itself is planned and executed (Rexhepi, et al. 2013). It is necessary for keeping the business sustainable also from the long-term perspective. CSR has to be part of the process since its very beginning and an integral part of business strategy. Incorporating CSR and business ethics into business strategy and having a strong internal desire and motivation to follow it, not only use it hypocritically as a PR tool, is the key to benefiting from this

concept (Graafland, van den Ben, Stoffele, 2003; Jauernig, Valentinov, 2019; Ramesh et al., 2019).

It is crucial for the companies to correctly understand CSR and its benefits for them, customers, society, all their stakeholders and include it into their business processes since the very beginning. CSR should be applied on all levels and with the prospect of continuous improvement (Gelbmann, 2010). Once integrated into business strategy, CSR can lead to increased innovation and produce competitive advantage (Baden et al. 2009; Bouquet et al. 2013; Gelbmann, 2010; Vishwanathan et al., 2019). In such a case, CSR can be fully exploited as a competitive advantage. Companies are nowadays under a much deeper scrutiny than ever before. Customers have easier access to information and are much more demanding and sensitive to CSR issues than in the past (Coombs, Holladay, 2015; Dawkins, Lewis, 2003; Kim, Krishna, Danesh, 2019). If an innovation is supposed to be successful, it has to offer a value added and a solution to a problem that is expected by customers, and what is an indispensable part of the story, in such a way that is expected. For this reason, already when innovating, CSR, and sustainable practices in general, should be taken into consideration. The findings of Rachel Bouquet's study (Bouquet et al., 2015) suggested, companies with strategic CSR (CSR incorporated into their business strategy) tend to achieve better results and higher growth especially via product and process innovation. Bouquet names it strategic and responsive CSR behavior. Term backward or forward CSR can also be used to name this phenomenon. This behavior, either incorporating CSR into business processes straight from the beginning via innovation with having minimum negative consequences to mitigate or just reacting „backwards“ and trying to diminish negative impacts of firm's operations on the customers, stakeholders, society and environment can influence company's growth and future prospects.

Some research show an indirect but significant effect of innovation on company's competitiveness via CSR – mediation effect (Marin, 2017; Ruggiero, Cupertino, 2018)) or a moderating - direct effect of innovation on company's CSR and its performance (Anser et al. 2017) versus the research that show direct relationship between innovation and CSR or vice versa – see table 1.

This scientific contribution is an addition to literature at two major levels. First, it looks at the issue of innovation and CSR from a different and less prevalent angle. It sees innovation as a major CSR driver and tries to prove the relationship in a less explored direction, from innovation to CSR. It attempts to explain how implementation of complex business strategy influences innovations and CSR of SMEs. Second, it provides statistical data about SMEs that represent a vast majority of existing enterprises - over 99% in all surveyed countries and create over 75% of jobs in private sector (Eurostat, Slovak Business Agency).

In addition, SMEs are less legally bound in terms of CSR in comparison with large companies, so their decisions and behavior are more driven by their own incentives than legislation (Halme, Korpela, 2014; Kirkwood, Walton, 2010; Masurel 2007; Rodgers, 2010). Moreover, surveyed CEE region still lacks empirical data on this topic.

The remainder of this article is organized in a following way: second section explains the theoretical framework. It summarizes qualitative research and shows the examples of literature on the studied topic. Research questions and hypotheses were stated, explained and analyzed. Third section describes methodology selection, sample selection and collection of data. In section four, results of empirical research and their statistical analysis were provided. The last, fifth section of this contribution, wraps up the major findings and conclusions.

2 Theoretical framework and hypotheses

2.1 Literature review

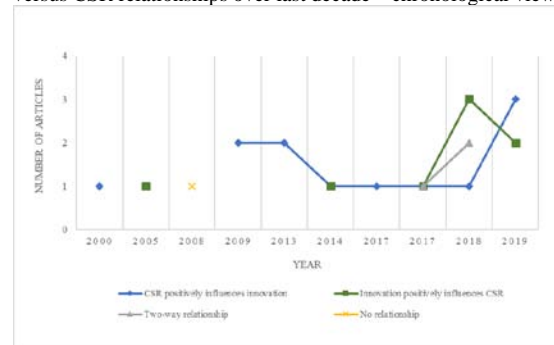
Studying the relationship between CSR and innovation is not easy. CSR especially, lacks a unified way of measuring. Most of the researchers study this relationship as a secondary topic, where the main focus of their research was the influence of CSR and innovation on company's growth and financial performance. However, there are already quite a few who attempted to scrutinize more deeply the relationship between these two discussed variables. The overview of these studies can be seen in table 1. Most of the authors concentrated on the influence of CSR on innovation (Bocquet, 2013, 2017; Garcia-Piqueres, Garcia-Ramos, 2019; Li et al. 2019; Kim et al., 2014; Kurapatskie, Darnall, 2013; McWilliams, Siegel, 2000; Martinez-Conesa et al., 2017; Miles et al., 2009; Nidumolu, Prahalad, Rangaswami, 2009; Ratnawati, et al., 2018; Poussing 2019), some of them identified two-way relationship (Guerrero-Vilegas et al., 2018; Mithani, 2017; Roszkowska-Menkes, 2018). However, less studies concentrated on the opposite direction of innovation on CSR (Bansal, 2005; Canh et al. 2019; Halme, Korpela, 2014; Mishra, 2017; Pedersen, Gwozdz, Hvass, 2018; Ruggiero, Cupertino, 2018; Wu et al., 2018; Zhu, Zou, Zhang, 2019). Table 1 shows an overview of selected sample of articles and their main conclusion of research. All reviewed articles were published in the last twenty years, in English and are registered in Web of Science database. Articles in other languages were excluded from this research.

Table 1 Overview of research conclusions of relationship between CSR and innovation

Year	Author	CSR positively influences innovation	Innovation positively influences CSR	Two-way relationship	No relationship
2000	McWilliams, Siegel	✓			
2005	Bansal		✓		
2008	Gallego-Alvarez et al.				✓
2009	Miles et al.	✓			
2009	Nidumolu, Prahalad, Rangaswami	✓			
2013	Bocquet et al.	✓			
2013	Kurapatskie, Darnall	✓			
2014	Kim et al.	✓			
2014	Halme, Korpela		✓		
2017	Bocquet et al.	✓			
2017	Mishra		✓		
2017	Mithani			✓	
2017	Martines-Conesa et al.	✓			
2018	Guerrero-Vilegas et al.			✓	
2018	Pedersen, Gwozdz, Hvass		✓		
2018	Ratnawati et al.	✓			
2018	Roszkowska-Menkes			✓	
2018	Ruggiero, Cupertino		✓		
2018	Wu et al.		✓		
2019	Garcia-Piqueres, Garcia-Ramos	✓			
2019	Li et al.	✓			
2019	Poussing	✓			
2019	Canh et al.		✓		
2019	Zhu, Zou, Zhang		✓		

Source: author's own

Figure 1 Development of research conclusions on innovation versus CSR relationships over last decade – chronological view



Source: author's own

Ratajczak and Szutkowski, after executing a major qualitative study in 2016, identified relationship of CSR and innovation as a significant subject of interest of researchers especially in last few years and a direction from innovation towards CSR as one of the interesting research gaps (Ratajczak, Szutkowski, 2016).

2.2 Hypotheses

Due to this identified research gap with which the author is fully identified and a lack of empirical data on this topic in CEE region, research presented in this article attempts to study the opposite relationship and see how innovation can affect CSR in a company. This study aims to answer the following research questions:

1. *Is innovation performance of SMEs associated with their CSR activity?*
2. *Does implementation of innovation into business strategy influence CSR performance of SMEs?*
3. *Is the relationship between SMEs innovation performance and CSR different based on the enterprise's age?*

Empirical research was carried out in three selected countries of CEE region – Austria, Czech Republic and Slovakia. These three CEE countries were selected because firstly, there is a lack of empirical data available on this topic from this region, secondly, they recently formed the latest loose cooperation cluster within this region called Slavkov Triangle or S3. This cluster of two Visegrad Four countries, Slovakia and Czech Republic joined together with Austria in January 2015 to build a new cooperation platform that might signal a certain level of the change of the distribution of forces within the CEE region (Jančoškova, 2017; Nič, 2016). These three countries are historically interconnected in all areas including business. Moreover, the objective was to see the comparison of results of two former communistic countries with lower environmental awareness Czech Republic and Slovakia with pro-environmentally oriented, mature democratic country – Austria.

In order to bring more light into the relationship of innovation and CSR three hypotheses have been formulated. Their validity has been further tested against the empirical data.

H1: Innovation performance of SMEs is associated with their CSR.

By confirming this hypothesis, the intention was to demonstrate that the more innovative the company is, all aspects of innovation included whether it is organizational, process, product or marketing innovation, the higher is the tendency to engage also in CSR. SMEs tend to be more active and flexible innovators (Rothwell, Dodgson, 1991; Rogers 2010). They are more agile in the creation process and have higher tendency to go their own way in the process of innovation and CSR unlike large firms who tend to adopt more formal policies in regards to CSR (Schalteger and Wagner, 2011). This contribution aims to show that even though the companies apply their own way of understanding CSR – applied via effective innovation process, it

can still be effective and cover all necessary areas as formal CSR frameworks that the large companies apply.

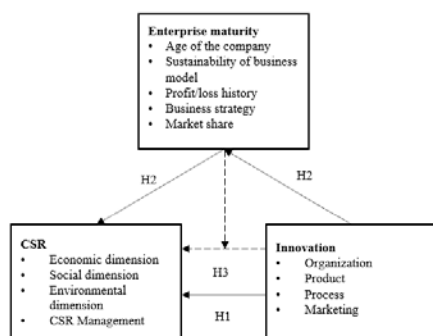
H2: Implementation of innovation into business strategy of SMEs is associated with their CSR.

Business world is rapidly changing. Keeping up with the pace is more and more difficult. Complex business strategy needs to be more flexible and the approach towards it more agile. Research showed in the past (Kirkwood, Walton, 2010; Masarel 2007; Rodgers, 2010) that SMEs are more motivated by sustainability of their business than just keeping up with the legislation. This study aims to prove that the stronger is the focus of an SME on creating and implementing complex business strategy, the more positive impact it has on its CSR performance.

H3: The association of innovation and CSR is stronger in younger companies.

This scientific contribution attempts to demonstrate that younger companies have a higher tendency to innovate with respect to CSR in comparison to older companies. These small and sustainably oriented SMEs might create new generation of green businesses as already suggested by researchers (Pink 2006; Rogers, 2010).

Figure 2 Relationship among hypotheses and variables



Source: author's own

3 Methodology of research

As getting official information regarding CSR, innovation or enterprise maturity level, what are the key variables of this research, is very problematic as SMEs are not obliged to disclose as much information about themselves as large companies do, getting data via survey was considered as the most appropriate approach. Performing a questionnaire survey was one of the most feasible ways how to obtain relevant data that are valid enough to be statistically evaluated. However, there are certain limitations of the questionnaire research such as non-response (in this case 72% response rate was reached), lack of knowledge of the respondents of the studied topic, understanding of the questions (minimized by the pilot study), truthfulness and relevance of answers or influence of cultural differences.

3.1 Sample selection

Research was executed in three Central European countries – Austria, Czech Republic, and Slovakia on the sample of 607 SMEs (n=607) - 202 Austrian, 202 Czech and 203 Slovak. Incomplete questionnaires were excluded from the final sample. The reason of the selection of countries within the region has been explained in chapter 2.

Table 2 Summary of the sample size per country

Country	Sample size small enterprises	Sample size medium enterprises	Total sample size per country
Austria	143	59	202
Czech Republic	140	62	202

Slovakia	145	58	203
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Source: author's own – based on survey results

Data were obtained via InnoCSR survey – questionnaire that was addressed to the management of randomly selected SMEs. Survey has been conducted during the period of 6 months, from January until June 2019. Validity and clarity of the questionnaire has been verified in a pre-research on 30 randomly selected companies (Austria 7, Czech Republic 11, Slovakia 12). Only slight modifications have been done before the questionnaire was further distributed. These 30 responses from pilot questionnaire testing were excluded from the final sample. Target population for this research were small to medium enterprises. Micro-enterprises, with 0-9 employees were excluded due to the lack of complexity. For the research purposes presented in this article, more complex business activity in the area of innovation and CSR was needed, so the survey was aimed at small enterprises with 10-49 employees and medium enterprises with 50-249 employees.

Table 3 Structure of respondents (n = 607)

Number of employees	n	Percentage
10-49	428	70.51%
50-249	179	29.49%

Source: author's own – based on obtained survey results

Majority of industries based on NACE coding was covered – the most respondents came from manufacturing, commerce and IT (see table 4). The rest was distributed among other categories.

Table 4 Structure of respondents – industry

Industry	Percentage of respondents AT	Percentage of respondents CZ	Percentage of respondents SK
Manufacturing	22.8%	22.3%	25.1%
Wholesale and retail trade; repair of motor vehicles and motorcycles	20.3%	20.8%	24.1%
Information and communication	12.9%	11.4%	13.3%

Source: author's own – based on obtained survey results

3.2 Measures

As the business activities in the field of innovation and CSR are rather complex, they are considerably difficult to measure. Holistic approach is more than necessary. In order to have complex, representative and objective measures of the objects of this research – innovation, CSR, enterprise maturity and their relationship, a comprehensive model was created. Three main variables – innovation, CSR and enterprise maturity were defined. Those were further broken down to sub-variables in order to increase preciseness of gathered data and to get deeper insight into the studied topic.

Creation of this measures was partially inspired and derived from the fundamentals of excellence models - EFQM, principles and standards used for implementation and monitoring of CSR - GRI standards, AA 1000 Accountability/Assurance Standard, ISO26000 and Oslo Manual (see appendix A). The goal was to approach the creation of measures systematically and have the substantial areas of business innovation and CSR activities covered. Innovation variable includes all innovation types as defined by Oslo Manual – product, process, organization and marketing, CSR includes all three standard dimensions – economic, social and environmental and CSR management as an addition. The third variable, enterprise maturity provides data on the sustainability of business model, profit/loss history and business strategy.

Based on the pre-defined measures, a questionnaire for online anonymous survey was created. Questionnaire consisted of 47 questions and was divided into four sections each consisting of required number of questions so that all measures are covered. Section A general - 5 questions, section B innovation - 16

questions, section C CSR - 23 questions and section D enterprise maturity - 3 questions. Majority of survey questions, excluding subject identification questions, in the survey were measured via five-point Likert scale: 1 strongly disagree, 2 disagree, 3 neutral, 4 agree, 5 strongly agree.

3.3 Data Analysis

Obtained nominal data gathered via InnoCSR survey (n=607) were further statistically evaluated. To test the validity of stated hypotheses, contingency tables, Pearson's Chi-square test, Cramer's V coefficient and mosaic plots were used. As a tool for statistical analysis, R software environment was selected.

The answers to the questions in the questionnaire are the realizations of the nominal random variables. We tested the independence of nominal random variables using the Pearson's Chi-square test. The Pearson test statistic χ^2 is

$$\sum_{i=1}^r \sum_{j=1}^s \frac{(n_{ij} - e_{ij})^2}{e_{ij}}$$

where

$$e_{ij} = \frac{n_{.j} n_{.i}}{n};$$

$i = 1, 2, \dots, r; j = 1, 2, \dots, s$ is used to make such comparisons. For large sample, the Pearson test statistic has a chi-squared distribution with $(r-1)(s-1)$ degree of freedom (Fagerland, Lydersen & Laake, 2017). Because several expected counts are less than 5, we use Chi-square test with simulated p-value based on 9999 replicates.

Mosaic plot (Marimekki plot) is used for illustration of the contingency tables and standardized residuals

$$\frac{n_{ij} - e_{ij}}{\sqrt{e_{ij} \left(1 - \frac{n_{.i}}{n}\right) \left(1 - \frac{n_{.j}}{n}\right)}};$$

($i = 1, 2, \dots, r; j = 1, 2, \dots, s$). One way to determine whether there is a statistical relationship between two nominal variables is to use the Chi-square test for independence. Cramer's V coefficient is a statistic used to measure the strength of association between two nominal variables

$$V = \frac{\chi^2}{\sqrt{\min\{(r-1), (s-1)\}n}}$$

where χ^2 is a value of the Pearson test statistic, r is the number of rows, and s is the number of columns. Cramer's V coefficient varies between 0 and 1. Tables which have a larger value for Cramer's V can be considered to have a strong relationship between the variables, with a smaller value for V indicating a weaker relationship (Akoglu, 2018).

4 Results and discussion

The results of this research are in line with those of several authors (Bansal, 2005; Canh et al. 2019; Halme, Korpela, 2014; Mishra, 2017; Pedersen, Gwozdz, Hvass, 2018; Ruggiero, Cupertino, 2018; Wu et al., 2018; Zhu, Zou, Zhang, 2019) that confirmed the positive relationship of innovation on CSR. Relationships of all innovation measures OI1-MI1 (see appendix A for more detail) were tested against all CSR measures ED1-CM7. Pearson's Chi-square test was used to test all relationships. Asymptotic significance (p-value) shows a significant relationship ($p < 0.05$) of majority of relations (at 5% level of significance).

Based on the results of empirical research (InnoCSR survey) there are certain exceptions. Three measures do not show significant relationship. It is measure SD8, EN4 and CM5 (survey question measuring level of performing activities to mitigate negative impacts of business pursuits on local community question 33 of InnoCSR survey, activities regarding environment question 37 and level of implementation of pre-

defined CSR metrics question 42). It implies that SMEs can have very strong CSR awareness, including proactive approach towards its implementation into its regular business activities while still not concentrating on performing CSR activities. These relationships are currently subject of the author's further research.

However, vast majority of tested relationships show significant dependence. As it can be seen from tables 5, 6 and 7 (see appendix B), the results are considerably homogenous for all three researched countries. Results of Czech Republic and Slovakia show very high level of similarity. As for Austria, empirical data demonstrate even higher level of dependence among tested variables. As in the case of Czech Republic, certain level of independence can also be seen on measures SD8, EN4 and CM5.

This difference in statistical results has been expected. It can be explained by the historical context of the region. Austria has a longer history of pro-green oriented policy, more mature market mostly caused by the fact that the development of SMEs and of private business in general has not been interrupted by the era of communism, in comparison with Czech Republic and Slovakia. Austrian SMEs also have more experience with CSR application than Czech or Slovak businesses as this concept is still relatively new in the region.

In order to test the strength of the association between two nominal variables Cramer's V coefficient was calculated for all relationships between innovation (measures OI1 - MI1) and CSR measures (ED1 - CM7). Values of Cramer's V coefficient are from 0 to 1, those close to 1 indicate strong association, while those close to 0 indicate weak association between the tested variables. Cohen (Cohen, 1988) divided Cramer's V into three groups based on the effect size. For $df = 4$ ($df = \min\{r-1, c-1\}$ and r is number of rows and c number of columns) values greater than 0.05 are considered small effect, greater than 0.15 medium and greater than 0.25 large effect.

Considering the needs of this research where Cramer's V coefficient was mostly used to verify the already found pattern via Chi-square test, the reference value for our purposes was moved from 0.5 to 0.35. As it can be seen from tables 9, 10 and 11 (see appendix B) the pattern has been proved. The lowest strength of association between tested variables was found on the measures SD8, EN4 and CM5. As expected, the strongest association was found in Austria. Results of Czech Republic do not significantly differ from those of Austria, however, Slovakia shows a bit lower strength of association between tested variables.

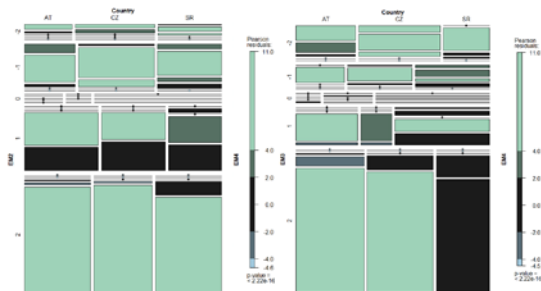
After statistical evaluation of empirical data obtained via InnoCSR survey, H1 can be considered as supported.

Second hypothesis, H2 - *Implementation of innovation into business strategy of SMEs is associated with their CSR* - was tested in the same way as H1. Chi-square test was calculated separately for each country. Measure EM4 - Comprehensive business strategy was tested against all variables measuring innovation (OI1 - MI1) and all variables measuring CSR (ED1 - CM7). As illustrated by tables 5, 6 and 7 (see appendix B) all tested relationships have $p < 0.05$ which indicates that all tested variables are dependent on each other at a significance level of 0.05.

In order to visualize data from four key categorical variables, relationships of EM4 vs. EM2, EM4 vs. EM3 and EM4 vs. CM4, mosaic plots were used. As it can be seen from figures 3 and 4, dependent relationship between each tested variable can be observed. Thus, it can be stated that those SMEs that follow comprehensive business strategy with focus on innovation have a more sustainable business model and their profits increased over the last five years (EM4 vs. EM2 and EM3). In addition, for those SMEs with strong focus on comprehensive business strategy, CSR tends to be integral part of their business processes and relationships. Consequently, H2 can also be considered as supported by the empirical research. However, as

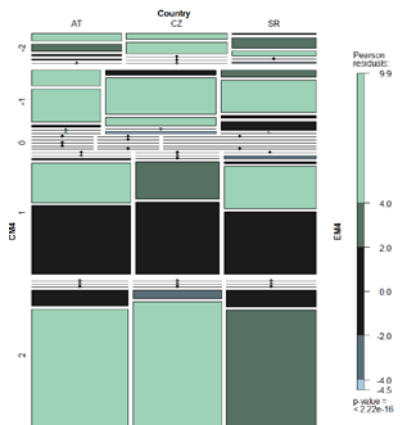
it can be seen from the breakout per country, there is slightly lower dependence of tested variables in Slovakia in comparison with other two researched countries. Which follows the same pattern as when tested via Chi-square test and measured via Cramer's V coefficient. In general, significant dependence can be observed in all countries, however, in Slovakia, the relationship is slightly weaker. This can be explained by the CSR concept being relatively new in Slovakia and this observation would be an interesting theme for additional research.

Figure 3 Mosaic plot illustrating the relationship of measures EM4 vs. EM2 & EM3



Source: author's own – based on empirical research

Figure 4 Mosaic plot illustrating the relationship of measures EM4 vs. CM4



Source: author's own – based on empirical research

The last hypothesis formed in this scientific contribution, H3 - *The association of innovation and CSR is stronger in younger companies* was examined via Cramer's V coefficient. The purpose was to test whether the age of the company has a significant influence on the relationship of innovation and CSR. As illustrated by table 11 (see appendix B), this hypothesis cannot be considered as supported as majority of tested variables show value of Cramer's V coefficient below our pre-set value of 0.35. Same pattern can be observed in all three researched countries. Differences in values are only minor.

Results of empirical research imply that even though the company is older, it doesn't necessarily mean that they are not able to follow modern business patterns and adapt to the turbulently changing environment. On the contrary, if the SMEs is older and still successful it had to undergo several transformations in the past, otherwise it wouldn't survive. So it can be assumed, it is well capable to engage in successful innovation activities.

Table 12 Summarized results of hypothesis testing

HYPOTHESIS	RESULT	
H1	Supported	Tested variables demonstrate significant levels of dependence as proved by empirical data. H1 is supported by statistical result of Chi-square test and Cramer's V coefficient.
H2	Supported	Tested variables demonstrate significant levels of dependence as proved by empirical data. H2 is supported by statistical result of Chi-square test and Cramer's V coefficient.
H3	Supported	Tested variables do not show sufficient strength of association as proved via Cramer's V coefficient.

Source: authors own – based on empirical research

5 Conclusion

Innovations are one of the main catalysts of economic growth and a base of current and future market economy. They provide society a tool for moving forward - for economic, technological and also social progress. Successful innovations could be a solution to majority of problems of today's world and a way to maintain current lifestyle and a level of comfort in a sustainable way. This could create an ideal situation with no tradeoff. The research presented in this contribution attempted to prove that being innovative actually leads to increased CSR engagement which means no tradeoff for the companies, customers and thus the whole society. More innovative the company is, the better and more effectively it exploits its innovation potential, including open innovation, the higher is the tendency of an SME to engage more in CSR. CSR comes out of this process naturally. Progress is realized by means of gradual improvement of situation via innovations.

The persistent issue is that CSR itself is often perceived by modern companies only as a philanthropy what is only mitigating consequences of its business activities and that is not a cure. Change has to come from within. Backwards or responsive CSR is not a solution. What can finally bring long-term results is the forward or strategic CSR (Bocquet et al. 2017). CSR needs to be an integral part of innovation. Innovating in a sustainable way has to come out of the business strategy itself. Innovations are driven by market needs – especially by customers who more and more value the sustainable lifestyle, products and technologies (Rahim, et al. 2011). They realize the impact of their consumers' behavior on the society as a whole and on the possible way of living for the future generations.

Combination of dependent variables, CSR and innovation, have a potential to bring benefits to all parties involved. As the statistical results indicate, innovations indeed have an influence on CSR. The more innovative the SMEs, the higher is their concern for CSR. The mindset of businesses slowly changes and it can be stated that the researched part of the CEE region is already developing in the right direction.

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Primary Paper Section: A

Secondary Paper Section: AE, AH

Appendix A – Measures

<i>Innovation</i>	<i>Variable</i>	<i>Description</i>			
<i>Organization</i>	OI1	Recency of SME's business model	<i>Social dimension</i>	SD1	Monitoring impacts of business activities on local community
	OI2	Regular innovation of business model		SD2	Monitoring employee satisfaction and loyalty
	OI3	Open innovation usage - implementation of latest accessible technology		SD3	Monitoring customer satisfaction and loyalty
	OI4	Business collaboration - strategic alliances, joint ventures		SD4	Adhering and exceeding health and safety regulations
	OI5	Implementation of idea management		SD5	Responsible and open communications towards employees, stakeholders and customers
	OI6	Level of involvement of top management in innovation activities		SD6	Sustainable talent development
	OI7	Implementation of innovation culture tolerating failure		SD7	Employee diversity
<i>Product</i>	PI1	Number of new products introduced during last 5 years		<i>Environmental dimension</i>	EN1
	PI2	Number of new products introduced during last 5 years is higher than the industry average	EN2		Adhering to and exceeding environmental regulations
	PI3	Increased sales from introduction of new product lines are visible	EN3		Company considers environmental impact of their innovation activity
	PI4	Increase/decrease in R&D expenditure	EN4		Regular conducting of CSR activities to mitigate negative impacts of business pursuits on environment
	PI5	Ability of R&D investments to generate new revenue (increase over 5year period)	<i>CSR Management</i>	CM1	Sustainable business practices are fully integrated into business strategy
	PI6	New innovative products are designed with respect to environment and society needs		CM2	CSR is part of organizational culture
<i>Process</i>	R11	Number of process innovation introduced during 5year period	<i>Enterprise Maturity</i>	CM3	Mission, vision and core values are setup with respect to sustainable business
	R12	Ability of implemented process innovation to generate value (decrease costs, increase revenue, increase customer or stakeholder satisfaction)		CM4	CSR is integral part of organization strategy (integrated into all business areas and all business relationships)
<i>Marketing</i>	MI1	Introduction of marketing innovation with measurable increase in sales		CM5	CSR is thoroughly planned and monitored (via valid and pre-defined metrics)
				CM6	Existence of internal code of conduct
<i>CSR</i>				CM7	SMEs implements anti-corruption policies
	<i>Economic dimension</i>	ED1	Ability of SME to generate profit while doing business in a sustainable way	EM1	Age of the company
		ED2	Transparent supply chain	EM2	Sustainability of the business model
		ED3	Transparent procurement process	EM3	Profit/loss history
ED4		Implementation of risk management	EM4	Comprehensive business strategy that is followed (with focus on innovation)	
			EM5	Market share of SME	

Source: authors own

Table 11 Cramer's V coefficient – age of the company vs. innovation and CSR

Austria			Czech Republic			Slovakia		
Innovation	Q2 EM1	Strength of association	Innovation	Q2 EM1	Strength of association	Innovation	Q2 EM1	Strength of association
Q6 OI1	0.4467955	strong	Q6 OI1	0.3713668	strong	Q6 OI1	0.4173975	strong
Q7 OI2	0.4274438	strong	Q7 OI2	0.3081762	strong	Q7 OI2	0.3512367	strong
Q8 OI3	0.2251373	weak	Q8 OI3	0.1720826	weak	Q8 OI3	0.1597490	weak
Q9 OI4	0.1376524	weak	Q9 OI4	0.1297138	weak	Q9 OI4	0.1438700	weak
Q10 OI5	0.1738277	weak	Q10 OI5	0.1485108	weak	Q10 OI5	0.1634164	weak
Q11 OI6	0.1540581	weak	Q11 OI6	0.1676379	weak	Q11 OI6	0.1787529	weak
Q12 OI7	0.2169474	weak	Q12 OI7	0.1666076	weak	Q12 OI7	0.2428156	weak
Q13 PI1	0.1221261	weak	Q13 PI1	0.2967682	weak	Q13 PI1	0.1644358	weak
Q14 PI2	0.1701600	weak	Q14 PI2	0.1836436	weak	Q14 PI2	0.2521133	weak
Q15 PI3	0.2052721	weak	Q15 PI3	0.1416284	weak	Q15 PI3	0.1465294	weak
Q16 PI4	0.1712247	weak	Q16 PI4	0.1529385	weak	Q16 PI4	0.2163374	weak
Q17 PI5	0.1705527	weak	Q17 PI5	0.1535916	weak	Q17 PI5	0.1542492	weak
Q18 PI6	0.1488947	weak	Q18 PI6	0.1334225	weak	Q18 PI6	0.1576228	weak
Q19 RI1	0.1879075	weak	Q19 RI1	0.1338424	weak	Q19 RI1	0.1717204	weak
Q20 RI2	0.2387024	weak	Q20 RI2	0.1260799	weak	Q20 RI2	0.1827954	weak
Q21 MI1	0.127136	weak	Q21 MI1	0.1524920	weak	Q21 MI1	0.1819272	weak
CSR	Q2 EM1	Strength of association	CSR	Q2 EM1	Strength of association	CSR	Q2 EM1	Strength of association
Q22 ED1	0.1291958	weak	Q22 ED1	0.1647346	weak	Q22 ED1	0.1755493	weak
Q23 ED2	0.1175238	weak	Q23 ED2	0.1087421	weak	Q23 ED2	0.1447905	weak
Q24 ED3	0.1233152	weak	Q24 ED3	0.0973484	weak	Q24 ED3	0.155284	weak
Q25 ED4	0.1791118	weak	Q25 ED4	0.1368191	weak	Q25 ED4	0.1458036	weak
Q26 SD1	0.1441279	weak	Q26 SD1	0.1396615	weak	Q26 SD1	0.1702163	weak
Q27 SD2	0.1235244	weak	Q27 SD2	0.1060167	weak	Q27 SD2	0.1636717	weak
Q28 SD3	0.1249386	weak	Q28 SD3	0.1335471	weak	Q28 SD3	0.1622072	weak
Q29 SD4	0.147647	weak	Q29 SD4	0.1481852	weak	Q29 SD4	0.1597697	weak
Q30 SD5	0.1320468	weak	Q30 SD5	0.1517465	weak	Q30 SD5	0.1405432	weak
Q31 SD6	0.1140852	weak	Q31 SD6	0.1413474	weak	Q31 SD6	0.1643972	weak
Q32 SD7	0.1282699	weak	Q32 SD7	0.1460079	weak	Q32 SD7	0.1487212	weak
Q33 SD8	0.1516955	weak	Q33 SD8	0.1451119	weak	Q33 SD8	0.1750632	weak
Q34 EN1	0.1083294	weak	Q34 EN1	0.1355958	weak	Q34 EN1	0.1630116	weak
Q35 EN2	0.1193523	weak	Q35 EN2	0.1597744	weak	Q35 EN2	0.1995187	weak
Q36 EN3	0.1392185	weak	Q36 EN3	0.1846869	weak	Q36 EN3	0.1668299	weak
Q37 EN4	0.1499954	weak	Q37 EN4	0.1719440	weak	Q37 EN4	0.216647	weak
Q38 CM1	0.1240064	weak	Q38 CM1	0.1398690	weak	Q38 CM1	0.1588456	weak
Q39 CM2	0.1275948	weak	Q39 CM2	0.1652457	weak	Q39 CM2	0.1931234	weak
Q40 CM3	0.1420354	weak	Q40 CM3	0.1781809	weak	Q40 CM3	0.1362915	weak
Q41 CM4	0.1240822	weak	Q41 CM4	0.1692926	weak	Q41 CM4	0.1602922	weak
Q42 CM5	0.1859432	weak	Q42 CM5	0.1247952	weak	Q42 CM5	0.1729513	weak
Q43 CM6	0.1756511	weak	Q43 CM6	0.1511426	weak	Q43 CM6	0.1511092	weak
Q44 CM7	0.1822313	weak	Q44 CM7	0.1382783	weak	Q44 CM7	0.1510268	weak

Source: authors own – based on empirical research

PLANNING EDUCATION - ASSESSMENT OF THE COMPETENCE (CASE STUDY)

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Abstract: The competence of designing and planning education belongs to key teachers professional competences aimed at the management of teaching process. The competence represents a relatively complex set of requirements on teachers consisting of both content and methodological mastery of a particular topic in a particular subject. The paper presents a case study describing the assessment process of the teacher competence to plan the teaching process in a specific subject lesson (Civics) using a newly developed assessment tools within the research project APVV-14-0446 *Evaluation of teacher competences* and applying the AAA (Annotation - Analysis - Alternation) methodology. The results are presented in the annotation part which shows the context of the teaching situation in the lesson and didactic grasp of the content of the curriculum, and the analysis part which deals with the method of content transformation and its evaluation from the point of view of different aspects of the competence. Finally, the discussion part of the paper provides alternative suggestions for the improvement of the monitored teacher professional competence.

Keywords: assessment, competence, education planning, teacher.

1 Introduction

The research project APVV-14-0446 *Evaluation of teacher competences* (2015-2019) had an ambitious goal: to create relevant tools for evaluating teacher competences and to introduce these tools into current school practice in the Slovak Republic.

Based on a pre-research survey of teachers and head teachers opinion all over Slovakia the research team identified ten key competences of the present teacher necessary for their successful work in schools (see Magová a kol., 2016; Lomnický a kol., 2017; Hašková - Dovalová, 2017). For each competence, three evaluation tools were designed, validated and fine-tuned: an assessment sheet, a self-assessment sheet and a sheet with the recommended outline of the post-observation interview (see also Stranovská a kol., 2018; Sandanusová a kol., 2018; Szijártóová a kol., 2018; Gadušová a kol., 2019).

The designed tools were step by step modified. The modifications respected on the one hand the opinions of experts, who commented on both formal and content issues, and on the other hand the observations of teachers from practice, which were based on pilot verifications of the tools created. Many practitioners participated in piloting tools, either as evaluators or as evaluated teachers.

The aim of the paper is to present one example, a case study, of the use of the developed tools for one of the ten competences - namely, the competence to plan education process and its application in a particular situation, in a specific subject lesson in school. It is a record of an authentic situation from teaching the subject *Civics* by an experienced teacher.

2 Materials and methods

The case study is based on the teacher's work in a specific lesson - Civics. The presented method of evaluation assumes the attendance of the evaluator (observer) in the lesson. The assessment model takes into account a systematic approach to the competence being analyzed, and comprises all the components involved in the development of the competence structure.

Using the developed assessment and self-assessment sheets the AAA (Annotation - Analysis - Alternation) evaluation methodology was implemented.

AAA methodology:

(1) Annotation describes and shows the context of the lesson (the situation in the classroom) and presents a description of the initial situation. Its aim is to point out, in this case, at teacher's ability to plan a lesson and its constituents.

(2) Analysis is carried out on the basis of the assessment criteria of the relevant assessment tool for the competence. It supports the ability of the evaluator to judge and evaluate the quality of the teacher pedagogical activities carried out.

(3) Alternation expresses the relationship between evaluation of the quality of planned and performed education and the evaluator's proposals aimed at improving the quality and effectiveness of the teaching process or the teaching situation. It is focused on actively seeking opportunities to improve the quality of planning and the evaluator together with the evaluated teacher suggests alternative ways of working, which stem from the taught lesson.

The assessment as well as the self-assessment sheet for teacher competence of designing and planning education takes the form of a table and provides a relatively fast and efficient record of the assessment of the criteria, through a choice of answers on the scale: 1 = yes, 2 = rather yes, 3 = rather no, 4 = no, NP = not possible to assess.

The need for a deeper analysis of teacher performance assessment also requires the evaluator to make use of the methodological opportunities provided by the AAA methodology. The selection of competence assessment criteria reflects the requirements that are differentiated into selected indicators (both criteria and indicators are part of the Assessment Sheet). For clarity, we present them in a tabular form (see Table 1).

Table 1: Evaluation criteria and indicators of the competence to design and plan education

EVALUATION CRITERIA	INDICATORS
<i>School planning system and planning in a particular subject</i>	<ul style="list-style-type: none"> The teacher took into consideration the requirements set in the school curriculum when planning the teaching process. The teacher relevantly achieved the lesson objectives in accordance with the school curriculum. When planning the lesson, the teacher reflected the results of their previous lessons monitoring.
<i>Monitoring the development of the subject from the theoretical and methodological aspect</i>	<ul style="list-style-type: none"> The teacher included current scientific knowledge into the content of the lesson. The teacher applied didactic analysis of the curriculum in the process of its planning. The teacher used teaching methods supporting active learning of pupils.
<i>Planning reflects interdisciplinarity in education and evaluation processes</i>	<ul style="list-style-type: none"> The lesson was planned with active application of cross-curricular connections. The planning of the lesson included the active application of cross-curricular topics. The teacher used a sophisticated procedure for assessing and evaluation of pupils' work and achievements.
<i>Lesson structure</i>	<ul style="list-style-type: none"> The teacher set central and partial goals of the different lesson stages.

	<ul style="list-style-type: none"> • The teacher implemented the planned content and performance requirements. • The teacher respected and adhered to the planned time schedule of the lesson.
<i>Content and methodology aspect of the lesson</i>	<ul style="list-style-type: none"> • The lesson respected the planned content stratification. • Selection and application of methods and forms of work corresponded to the achievement of the set objectives for the lesson. <ul style="list-style-type: none"> • The logical structure of the curriculum content met the requirements of its didactic transformation. • The methodological approach was appropriate to the age of the pupils and their individual differences (specificity of the approach to a certain group of pupils).
<i>Lesson in the context with pupil's needs</i>	<ul style="list-style-type: none"> • The teacher systematically developed selected competences of pupils. <ul style="list-style-type: none"> • The teacher used the educational aspect of the lesson planned according to the topic. • Teacher's contact and cooperation with pupils was thoughtfully realized. • The use of material and didactic means was thought out and purposeful.

Source: own elaboration

3 Results

The developed assessment tools for the competence to plan the process of education were applied in a lesson of a compulsory subject *Civics* the topic of which was *Legal state and its features* being a part of the thematic unit *Citizen and state*. It was carried out in the second grade of an upper secondary school. The main goal of the lesson set by the teacher for learners was acquiring knowledge about legal state and its functioning. The teacher set also some specific goals, content and performance standards. Furthermore, relevant learners' competences, teaching methods and forms of work, interdisciplinary connections, material and didactic means were also defined (see Appendix 1).

As to the structure of the lesson (see Appendix 2), it consisted of all parts of a standard lesson in which methods oriented at active learners' work supported the development of critical and independent thinking (see also Entlova et al., 2018). The main goal of the lesson was introduced at the beginning of the lesson and was followed by review and diagnostic lesson stages lasting 10 minutes. A caricature representing totalitarian regime – fascism, was presented to the learners. Their task was to identify the regime and name different features of totalitarianism based on the concrete examples from the caricature. In the motivational stage of the lesson (5 minutes) the teacher draw a table with two columns on the blackboard and the learners were asked to write the features of the totalitarian regime into the first column, and, based on these features, they tried to identify features of a democratic regime and write them into the second column of the table. In the exposition stage of the lesson (15 minutes), the teacher asked the learners the following questions:

- *You have listed characteristic features of both regimes; where are these features enshrined?*
- *Can these features be found in the Constitutions of states or in other Acts?*
- *Do the totalitarian regimes have their Constitutions?*

In this stage of the lesson, a combination of teaching methods of subject matter explanation (mainly special terms and notions were presented) and continuous Socrates discussion was used.

The method of work with special text was used during the pair-work when learners were given texts of two constitutions: Constitution of the Slovak Republic dated 31 July 1939, and Constitution of the Czechoslovak Socialist Republic (11 July 1960). The learners were expected to analyze the texts and find answers to the given questions, and, while working with the texts of the two Constitutions to deduce basic principles of a legal state.

In the fixation stage (8 minutes), the learners were expected to apply the acquired knowledge and fix it for what the teacher chose a method of individual work. Each learner received a text for their own use, and their task was to identify undemocratic features and transform them into democratic ones corresponding to the legal state. The set homework was aimed to further develop the cognitive part of the topic; this stage lasted two minutes. In the final stage of the lesson (another 2 minutes), the teacher assessed the learners' work and summarized what they should learn about the presented topic by writing the key words on the blackboard.

The teacher fixed all the above mentioned stages in a model lesson plan (Appendix 1 and 2) which illustrates the quality of the teacher's competence to plan a lesson. The model takes into account several relevant factors: school, specification of the complex educational requirements, specification and development of performance requirements for pupils, creative didactic modification of teaching content, creative work of the teacher with teaching methods and learning situations.

Having this annotation and being present in the lesson as an observer and assessor, the lesson was analyzed on the basis of the six assessment criteria for assessing the competence (see Table 1 above). Each of the criteria contains indicators creating the inner structure of the criterion. In the analysis, assessors can apply a contextual approach based on considering different indicators in their mutual intertwining in such a way that a created image about the quality of the applied criteria used for the assessment is complex.

It should be remembered that in planning the teaching process, the teacher followed the requirements of the school educational programme formulated within the aims of the school subject *Civics*. In the lesson, the teacher was developing learners' legal awareness, strengthened their sense of personal and civil responsibility, and motivated them to the active participation within the life in the democratic society. In planning the lesson, the teacher took into account learners' knowledge from the previously taught topics. The monitoring of the lesson, however, did not prove the expected outcome; some learners were not able to react to the teacher's questions appropriately.

The teacher showed excellent knowledge in the field of citizenship education, namely, in its content part – law, which he adequately connected with the knowledge from history. The comparison of democratic and undemocratic political systems provided learners with relevant information about the character of the legal state. This was emphasized in the context with the current political and social situation in the Slovak Republic which, to a certain extent, tolerates activities of political groups preferring undemocratic elements. The use of actualization which is inevitable in the subject *Civics* was positively assessed.

Didactic analysis of the teaching material was appropriate, the lesson results demonstrated that the teacher in the process of planning considered this aspect to be important as the learners showed a good orientation in the given problems and were able to relatively correctly solve individual tasks in the fixation stage of the lesson.

The teacher used several teaching methods. In the exposition stage, besides the explanation, Socrates discussion was applied, the questions were asked frontally, demonstrations were included. During the explanation stage of the lesson, the learners were writing information on the blackboard and, at the same time, in their exercise books, what gave them a better image

about the presented matters. In the process of interpretation of the special texts (Constitution of the Slovak Republic brought into force on 31 July 1939, and Constitution of the Czechoslovak Socialist Republic brought into force on 11 July 1960), the teacher applied group-work thus fulfilling the requirement of active learning. Teacher's work oriented at the development of learners' knowledge and attitudes, what they could express while working with the constitutions texts, can also be assessed positively; the learners were given space for expressing their opinion on the adherence to these documents.

From the lesson observation it was evident that when planning the lesson, the teacher included active application of interdisciplinary connections with other school subjects. Above all, the connection with the subject of history dominated; knowledge from this subject was used by the learners during the exposition stage of the lesson. The application of the Slovak language and literature subject knowledge and skills was observed in the learners' work with the texts of Constitutions; it was primarily about the special text comprehension which was evident in the answers to the pre-formulated questions, such as: *In your opinion, do the selected parts of the Constitution show its democratic nature? Justify your opinion.* The language element of the subject was also used in learners' independent work during the fixation stage of the lesson; the learners answered the questions in the written form.

The application of the cross-curricular connections formulated in the innovated State Educational Programme should also be a part of the lesson planning. The lesson observation clearly showed the use of the topic *Personal and social development* planned by the teacher. The post-observation interview revealed that though the application of some elements of the topic *Multicultural education* was planned, the teacher was unable to apply them sufficiently.

In the lesson, verbal evaluation of learners prevailed; the teacher used such words by which he expressed his satisfaction with learners' work (as, for example, *excellent, well done, I agree, thank you*) but also his dissatisfaction (as, for example, *I don't agree, give more evidence*). The teacher systematically observed the learners' performance and supported them with positive reinforcement. Grading of learners was not used in the lesson.

The teacher appropriately set the main goal of the lesson which was focused on acquiring the relevant knowledge about the legal state and principles of its functioning. Specific, partial aims were differentiated on the basis of B. S. Bloom, D. R. Kratwohl, and E. J. Simpson taxonomy:

- cognitive aims: the learner can define the legal state, can list the principles of the legal state and the differences between the democratic and undemocratic regime;
- psychomotor aims: the learner can identify democratic and undemocratic features in the constitution and other related texts;
- socio-affective aims: the learner can assess advantages and disadvantages of the legal state and can express their own attitude to and opinion about different state political regimes.

The teacher did not set the aims for different stages of the lesson that is why their achievement cannot be assessed.

The educational standards were formulated in compliance with the requirements on the subject *Civics* included in the State and School Education Programmes. The performance standard was focused on the learners' ability to grasp and understand the meaning of the legal state notion and their ability to use its principles in practice. Knowledge related to mastery of the conceptual apparatus of the topic - legal state, act, state power, restrictions of power, was part of the content standard.

The timing of different stages of the lesson was planned well; the teacher respected it and kept the time limits, just with the

exception of small time discrepancies which resulted from the learners' work.

Based on the course of teaching using the selected methods and didactic means, it is possible to conclude that the teacher coordinated the teaching process on the basis of pre-thought and planned steps. In this context, no major hesitations were observed either in the timing of the lesson stages or in the presentation of lesson content. Similarly, we evaluate the chosen methods and forms of work that have been selected in accordance with the planned aims and objectives.

We also appreciate the systematic approach in relation to the curriculum content structuring. The presentation of the teaching material had the necessary logical structure, from the undemocratic features of the state the teacher moved to the democratic ones, which the learners compared with the given undemocratic features. This was followed by the presentation of the principles of the legal state and their comparison with undemocratic principles. Working with the institutes formed the application part of the exposition stage, in which the learners were looking for the features showing suppression of human rights and freedoms.

We consider the consistency of the methodological structure of the lesson with the age and mental-knowledge dispositions of learners to be appropriate. The teacher did not apply any specific individual approach to the learners because there were no learners with special needs in the classroom.

In planning the lesson, the teacher formulated his ambition to develop learners' civil, communicative and social competences. The choice of competences in the context with the topic is considered to be correct. The development of learners' civic competences was evident during the whole lesson; the teacher supported learners' need to understand the citizens' rights and their observance, as well as learners' interest in the current state of social events, its evaluation and expression of individual standpoint based on arguments. The communicative and social competences were developed through the support of oral and written communication tasks for group-work during the lesson. The educational dimension of the topic of the lesson was significant; the teacher supported it especially in establishing and adjusting learner attitudes, although he did not include this aspect directly in planning.

The teacher's contact and cooperation with learners was carried out at an appropriate level. The teacher used cultivated communication that corresponded to the professional demands placed on teachers. He spoke accurately, clearly, briefly and comprehensibly. His communication with learners was polite and his behaviour was pleasant.

The use of material didactic means, i.e. the teacher's didactic-technological competence (Záhorec - Hašková - Munk, 2017), can also be positively evaluated. The teacher used appropriate teaching aids which served the learners not only as a source of information but also as a motivation for learning (Brečka - Valentová - Hašková, 2019). In the presentation stage, he used interesting pictorial materials in which the learners were trying to identify the features of undemocratic regime. An important part of the exposition stage of the lesson was working with the Constitutions carried out as group-work. Both the learners and the teacher used the blackboard. Through the power-point presentation, the teacher could use other teaching material not only to diversify and enrich the lesson, but also to motivate the learners to work with this rather demanding topic. The presentation also served as a source for learners' notes.

4 Discussion

Quality assessment means assessing the extent to which the objectives of teaching are met by the learners through which we pursue:

- basic concepts or abilities,
- analysis and understanding of content,
- generalization, application.

(See also Múglová - Malá, 2017).

There are four quality levels that can be distinguished:

Level of failure: teaching does not benefit learners; the competences of learners are not developed; it is the result of didactic misconducts in teaching.

Underdeveloped level: teaching provides learners with an opportunity to acquire just basic knowledge, but does not allow for a wider development of their competences.

Incentive level: teaching leads learners to actively understand the topic, providing them with incentives (stimuli) for assessment, judgment, and deduction.

Developing level: learners show their ability to generalize knowledge, apply it, understand social relations; in assigned tasks they show understanding of the topic in a broader context (Janík - Slavík, 2016).

The quality assessment of teacher's work is possible in the form of: (a) data tables that are time-saving and provide quick orientation and notation; (b) written comments on target qualities and their levels (see also Čeretková a kol., 2019).

In the context of the assessed competence - to project and plan education, we evaluated the work of the teacher as follows in Table 2.

Table 2: Assessment of teaching quality

TARGET QUALITIES	QUALITY LEVELS			
	Failure	Underdeveloped	Incentive	Developing
Basic notions or abilities			+	
Analysis and content comprehension				+
Generalization, application			+	

Source: own elaboration

Based on the presented case (teaching the topic *Legal state and its features* in the *Civics* lesson), evaluation of the quality of teacher work, taking into account the requirements on professional competence to design and plan education, it is possible to present several proposals resulting from the analysis of different evaluation criteria. It is also important to draw attention to the need to justify the proposals. For illustration, we present the following proposals:

- More consistent use of monitoring aimed at determining the quality of learners' knowledge and skills. Despite the fact that the teacher used monitoring in the diagnostic stage of the lesson, when he was checking the application of learners' knowledge from previous topics, the learners' reaction showed that the cognitive aspect of the previous topics does not reach the required quality.
- Active use of cross-curricular connections is part of the planning. It can be stated that the teacher has actively used the context of History and Slovak Language subjects. However, it is possible to propose to use in the topic also cross-relations with the subject of Geography; for example, by searching for states on a geographic map that currently have a democratic or undemocratic government regime. Another proposal relates to the skills of learners acquired in the subject of Informatics. Pupils can individually find

examples of democratic and undemocratic government regimes on their mobile phones.

- The teacher planned to use the cross-curricular topic of Multicultural Education, but it was not implemented during the lesson. It is possible to suggest that the methodological approaches that will be used to implement this topic should be incorporated into the lesson scenario. For example, the teacher points to current events in the N country and it is up to the pupils to reflect on the impact this has on the domestic and neighbouring countries, and how the solidarity of the population outside the region should be shown, or what lessons we should draw from this.
- Setting partial goals for different stages of the lesson can be beneficial. Consistent planning of all stages of the lesson should also include partial educational and teaching goals; their clear identification can support the quality of learning outcomes, which are learners' competences.
- During the lesson, the teacher also directed learners' activities in terms of contributing their upbringing aspect. Therefore, it can be suggested that the teacher includes into the lesson scenario planning also the upbringing goals and methodologically specifies this potential of the topic.

We assume that the alternative suggestions may correspond to the following planning issues:

- The need for more consistent application of teacher monitoring reflection from the previous teaching process in a particular subject.
- Planning the implementation of current scientific knowledge and current events in the world, this is related to the overall updating of the subject content, and their didactic transformation into the teaching process.
- A more consistent approach to systematizing learners' knowledge in the active application of cross-curricular connections and topics.
- Planning and implementation of the main aim of the lesson and the partial objectives of its different stages.
- The degree of suitability of the planned methodological approach in relation to the individual needs and possibilities of learners (differentiated approaches to specific groups of learners).
- Active use of the upbringing aspect of the topic.

5 Conclusion

There is no doubt that the profession of teacher places high demands on the personality of the teacher. Each lesson is a small story that should neither be a thriller, nor a jolly comedy. The story of each lesson, each educational situation, should be written using the specific subject vocabulary, interlocked with the wise and kind words of the narrator - the teacher, and should provide the audience - the learners, with enough incentives to remember and think. The story of a well-taught lesson, or a successful classroom situation, should end with a curious, perhaps impatient, pupil's question: *What will happen next?* and, ideally, with an emotional addendum: *I'm looking forward to continuing the story!*

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APPENDICES

Appendix 1

Model Lesson Plan of the Assessed Lesson - teaching aims and learning standards

(designed on the basis of the requirements corresponding to short-term planning)

School, grade	Upper secondary school, 2 nd grade.
Teacher	
Thematic unit	Citizen and state.
Topic	Legal state and its features.
Main aim	Learner acquires knowledge about legal state and its functioning.
Specific/partial objectives/ aims	<p>a) <i>Cognitive</i>: learner can define the legal state, can list the principles of the legal state and identify differences between democratic and undemocratic regime.</p> <p>b) <i>Psychomotor</i>: learner can identify democratic and undemocratic elements in constitution and other related texts.</p> <p>c) <i>Socio-affective</i>: learner can assess advantages and disadvantages of the legal state, can express his/her own attitude to and opinion about different state political regimes.</p>
Performance standard	Learner can define the notion legal state, its meaning and principles.
Content standard	Legal state, act, state power, power restrictions.
Development of competences	Civil, communicative, social competences.
Cross-curricular topics	Personality and social development, multicultural education.
Interdisciplinary connections	History (examples of periods when power constraints did not exist), Slovak language and literature.
Teaching methods	Socrates discussion, questions and answers, explanation, work with special texts.

Organizational forms of work	Individual work, group-work.
Material and didactic means	Caricature, blackboard, markers/ chalk, writing instruments, sample texts of constitutions of 1939 and 1960, power-point presentations, work-sheet
Instruments for assessing learners' performances	Work-sheet.

Appendix 2

Structure of the Model Lesson Plan of the Assessed Lesson

Stage and timing	Teacher's activity; Learner's activity	Specification of methodological steps	Didactic notes	Teaching aids
Introduction 3 min.	Introducing the lesson.	Greeting and introducing the aim of the lesson.		
Checking / diagnosing 10 min.	Teacher displays a caricature and then learners analyse and assess it.	Learners try to identify features of undemocratic (totalitarian) regime in the caricature and write them on the blackboard.	Involving all the learners into subject topic revision.	Caricature; blackboard; markers/ chalk.
Motivation 5 min.	Teacher asks a question and learners answer it.	Based on totalitarian regime features learners try to define features of democratic regime.		Blackboard; markers/ chalk.
Exposition 15 min.	Teacher explains new teaching material, learners write notes.	Using the method of Socrates discussion, the teacher asks questions and explains notions.	Remember to emphasize important information that learners should write down.	Blackboard; markers/ chalk; sample texts of 1939 and 1960 constitutions.
Fixation 8 min.	The teacher sets the task, the learners complete it individually.	Using the text provided by the teacher, learners try to identify the principles of totalitarianism and transform them into principles of a democratic state.	Each learner should work with his/her text individually.	Work-sheet; writing tools.
Setting the homework 2 min.	Teacher sets homework, learners write it down.	Learners should learn the differences between totalitarian and legal states.	Make sure that each learner has noticed the assignment.	Exercise book; writing tools.
Conclusion (end of the lesson) 2 min.	Summarizing the teaching material.	Setting keywords of the subject matter.	Learners will fix the material they learned.	Blackboard; markers/chalk.

THE SCHOOLING OF SAMUEL TEŠEDÍK AND HIS “PRACTICAL AND ECONOMIC INDUSTRIAL SCHOOL” IN SZARVAS

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Abstract: The author presents one of the most important Slovak personalities from the so-called “Dolná zem” (engl. Lowland) : Samuel Tešedík from Szarvas, who created – especially in the field of agriculture education – works of European format. Tešedík’s greatest pedagogical contribution was the establishment of the first practical agricultural school in Hungary. He devoted himself not only to teaching of students but also to education of the common people. Thanks to his work and activities, he is still highly acclaimed by Slovak historical science. At the same time, he is a constant source of inspiration for people engaged in agriculture. In this study, the author emphasizes that the work of Samuel Tešedík in the field of public education and reformist work in agriculture is quite unique – and not only from the perspective of 18th century.

Keywords: Education. Practical and Economic Industrial School. Samuel Tešedík. Szarvas

1 Introduction

Samuel Tešedík occupied himself with pedagogical activities since his early youth. When he was twelve years old, he became a home educator in several prominent families in Bratislava. He recalls this period in his autobiography: “I have learned then more about habits, thinking, prejudices, household management, speech, mistakes, transgressions, virtues and the needs of various kind of families – bourgeois (especially craftsman) families, business families and also juristic families. How could I learn that at school? And what for is all the learning without this knowledge? I examined the talents and abilities, the mistakes and weaknesses of my students, but also the sources and causes of their shortcomings. I learned to recognize the good and bad morals of gentlemen and ladies, children and servants, helpers and apprentices, „patvarists“¹ and weavers, cooks and maidens, family friends and interlocutors. In my early years, I have gained such a knowledge of the world and people, without which it is not so easy for a person to succeed in the world” (Čečetka, 1959).

After his university studies, full of reform enthusiasm and devotion to the affairs of the people, he begins his teaching career in Szarvas, situated in the Lowland² of Kingdom of Hungary. At first, he focused only on occasional public education. For that purpose, he used family visits and his sermons. Gradually, he found out, that in the recovery of the village involvement of the school is needed. In 1779, he founded a school in Szarvas, which he called the “Practical and Economic Industrial School” (but in historical documents we can also find other names of this school: “Economic and Industrial Educational Institute”, “Practical and Economic Industrial Institute”, “Practical Agricultural and Industrial Institute”).

¹ It means “trainee lawyer”.

² This term “Dolná zem” (which can be translated as “The Lowland”) historically originated by the translation of the Hungarian expression Alföld and in the first three following meanings still corresponds to it. It can denote following things:

- The Great Danube Basin or, to be more precise, historical geographic region in its territory;
- In older geography: The Great Danube Basin together with the Little Danube Basin;
- Opposite of the northern predominantly mountainous part of Kingdom of Hungary (which means today’s Slovakia), i. e. southern (predominantly) lowland part of Kingdom of Hungary;
- the territory of Kingdom of Hungary south of today’s Slovak-Hungarian border;
- all (historically created) Slovak settlements lying south of the Slovak-Hungarian border – including regions in Zadunajsko (Engl. Southern Transdanubia), Novohrad (Germ. Neograd, Hung. Nógrád), Bukovina (Germ. Buchenland/Bukowina) and some regions in present-day Bulgaria;
- Bulgaria plus the southern part of Kingdom of Hungary: Danube and Tisza Basin (The Great Danube Basin located only in the territory of present-day Hungary, Romania, Croatia, Serbia), which – after the displacement of Turks – became the center of great internal migration of the population;
- parts of Hungary, which were in the 18th century and 19th century colonized by Slovaks (i.e. the parts of present-day Hungary, former Yugoslavia and Romania inhabited by Slovaks);
- territory with Slovak settlements (only) around the Hungarian, Romanian and Serbian borders;

This institute had two levels. The first level consisted of general or elementary school; it was basically an improved *Volksschule*³. For the needs of this school, Tešedík also published the book named *Knížečka čítaní a k prvním začátkům vzdělání školských dětí, spořádaná podle potřeby dolnozemské mládeže evangelické* (engl. The Small Reading-Book Designated for the Very Beginnings of the Education of Pupils, Organized according to the Needs of the Evangelical Youth of Lowlands) (1780) (Sliacky, 1973). In the first level, children learned to read, write and count. Within the subject of reading, pupils also acquired factual knowledge (so-called “factual learning”). In an accessible style, he lectured to children about economic knowledge, nature, health, duties, virtues and mistakes of future servants and farmers; he was teaching them children songs of educational and useful character; he also introduced games that were instructive in nature and also served to relax. Tešedík made sure that the correct knowledge of God was spread. He raised people of reasonable reason from his students, warning them of naivety, superstition, harmful opinions and sins. He also received Catholic children at his school, although many evangelical pastors did not like it.

The second, upper level of the school has a character of vocational education and practical high school. At this second level, the preparation for the practical profession was carried out: it was taught geography, natural history, physics, chemistry, gymnastics, health science (dietetics), veterinary medicine, civil engineering, finance, trade, agriculture technology and pedagogy. Part of the inmates at the second level was to devote special attention to the teaching profession, which Tešedík placed great emphasis on. According to the ideas of Samuel Tešedík, the teacher is to be very much involved also in the education of the common people. He should be well prepared not only for work in school, but also for public education. He should study the people, their ways of thinking, acting, their habits, morals, prejudices, so that they can be really good public or “folk” educators.

Tešedík’s Institute was also a manufacturing company. It was engaged in agricultural and industrial production as well as business. He had his own land and a number of different workshops at the level of advanced manufactory. The Institute organized production, teaching and recreation of pupils; it consciously linked education with production and gainful employment. Pupils were able to progressively enroll in 60 different types of work according to current seasons, their physical abilities and also their interests. The pupils were engaged in the cultivation of agricultural crops, fruit growing, beekeeping, silk production, textile production, joinery. In a similar way, the school also educated girls. There was the focus on practical training in horticulture and household chores, textile production (spinning, weaving, dyeing, cutting and sewing), but also in the collection and use of medicinal plants. Despite promoting his idea of linking theory with practice, Tešedík did not fall into pure practicalism. On a regular basis, pupils had to work out also theoretical papers and projects (Kmet’, 1998; Hirner, 1999).

Despite the fact that Samuel Tešedík focused primarily on raising children from an early age, his school was accessible to adults as well. In the premises of the Institute, he created so-called “folk education center”, where he organized different courses for adults, which were associated with practice of production. The library, which contained thousands of books from 12 subject fields, was open to all citizens from the village and the wider area.

³ This German term generally refers to compulsory education, denoting an educational institution every person (i.e. the people, “Volk”) is required to attend. This name is being used to designate the first level of elementary school for poor children, who could not afford to pay private teachers, but were obliged to attend the school.

Tešedík, in addition to the education of pupils, constantly paid attention to improving and further training of teachers. He organized school conferences where teachers exchanged their opinions and experiences and collected a number of materials to compile a methodological book for teaching various subjects (Čečetka, 1959;).

Tešedík's Institute in Szarvas focused on education of pupils, common people and teachers became a model for the establishment of schools of the same nature in Germany, in other parts of Austria-Hungary and also in Russia. In fact, the Practical and Economic Industrial School in Szarvas is considered to be the first agricultural school of its kind in the world and it became the foundation for specialized agricultural, forestry and veterinary education in Hungary and Slovakia (Kmeť, 1993; Martuliak, 2004)..

2 Method

In the processing, we used direct method, with which we verified the reliability of the sources. Subsequently, we used a progressive method that is consistent with the time course. Then we followed with the retrospective method, which is the opposite of the progressive method. By using this method, we explain older phenomena using newer phenomena. We were aware of its danger, namely the danger of modernization, which arises when assessing history from the current perspective.

3 Samuel Tešedík and his pedagogical and educational work

Samuel Tešedík has written more than 150 books, studies, articles and records; mostly in German, less in Latin and some in Slovak (or Czech). Of all his works, only 18 were published in form of books or articles. Others were preserved only in manuscripts or were lost (Čečetka, 1959;).

His main literary work is the book *The Peasant in Hungary*, what it is and what it could be; with a plan of a modified village (German original *Der Landmann in Ungarn, was er ist und was er sein könnte; nebst einem Plane von einem regulierten Dorfe*) from 1784. In this work, Tešedík criticizes in many ways the situation in the village and human society and quotes particular cases of oppression and exploitation. He also points out to the poverty of subjugated people and the lack of activity among the people. The work proposes the ideal organization of the village and its development, including the construction of educational and cultural institutions, health and social facilities (Čečetka, 1952; Himer, 1999). Tešedík's views on the rectification of the moral and material misery of the subjugated people differed significantly from those of other enlightened and philanthropic educators who regarded education as the only possible remedy. Despite his great appreciation for education, Tešedík sees a significant moment in correcting the poor position of the people in the reform of the socio-economic area of society. Samuel Tešedík firmly defended his view that education should not be limited to school, but should seep into the family and the whole life of society. In this spirit, he then develops his pedagogical writings and works.

From the pedagogical point of view, the most important works of Samuel Tešedík have been preserved only in the form of manuscripts, which were gradually translated into Hungarian and Slovak. They were published in printed form only during the 20th century. In this study, we decided to discuss in detail his four most acclaimed pedagogical works:

- *Knížečka k čítaní a k prvým začátkům vzdělání školských dětí, spořádaná podle potřeby dolnozemske mládeže evangelické* – 1780 (Engl. *The Small Reading-Book Designated for the Very Beginnings of the Education of Pupils, Organized according to the Needs of the Evangelical Youth of Lowlands*)
- *Úprava dekanom – Pokyny Tešedíka, kňaza v Sarvaši, pre dekana, čiže školské pripomienky, z ktorých sa môžu poučiť dekaní, farári ako miestní školskí inšpektori a učitelia* – 1781 (Engl. *Dean's Adjustment – Instructions of Tešedík,*

Priest in Szarvas, for Dean, or School Remarks, from which Deans, Pastors, Local School Inspectors and Teachers Can Learn)

- *Dvanásť paragrafov o uhorskom školstve* – 1791 (Engl. *Twelve Sections on Hungarian Education*)
- *Mój názor na školskú učebnicu pre väčšie prakticko-ekonomické vidiecke školy* – 1793 (Engl. *My Opinion on the School Textbook for Bigger Practical and Economic Rural Schools*)

3.1 The Small Reading-Book Designated for the Very Beginnings of the Education of Pupils, Organized according to the Needs of the Evangelical Youth of Lowlands – 1780

This work was based on various German sources. It is mainly inspired by the works of pedagogical philanthropists such as Friedrich Eberhard von Rochow (*Versuch eines Schulbuches, for Kinder der Landleute, oder Gebrauch in Dorfschulen*, 1772; *Der Kinderfreund*, 1776), Christian Felix Weiss (*Kleine Lieder für Kinder*, 1766; *Neues ABC-Buch*, 1772) and Joachim Heinrich Campe (*Robinson der Jüngere*, 1779). It can be unambiguously said that Tešedík was largely influenced by the opinions of Friedrich Eberhard von Rochow (1734 – 1805). Under the influence of his philanthropic and pedagogical principles, the main purpose of Tešedík's reading-book become the formation of the child's world of opinion, the formation of its moral profile, diligence and obedience. It was Rochow, who inspired Tešedík to write an encyclopedic textbook for elementary schools. Its aim was to write a book for children that would fill the gap between the classic curriculum and the Bible in teaching (Sliacky, 1973).

The book is divided into three parts. The Latin introduction is addressed to teachers. Tešedík, in accordance with the pedagogical realism, points out that "it is unnecessary to present the abstract truth to the very young and inexperienced generation, and it is vain to impose it by knouts, sticks and cane, because the child will even more probably forget that, to which have stronger distaste and dislike." The introduction also serves as a methodological instruction for the teacher; Tešedík reminds teachers to analyze, explain and repeat the individual articles in the book for a long time, but also to apply them to various practical examples, until the pupils understand the whole problem. He completed his teaching requirements by appealing to teachers to respect the individual pupil's personality.

The methodological introduction is followed by the curriculum part, which presents to the pupil the alphabet, individual phonetic groups and words.

The reading part itself consists of 30 lessons. The aim of each lesson is to acquaint children with divine wisdom, the nature of good and evil deeds, the need for a hierarchical organization of society and the Christian religion. There are also lessons about seasons, continents, animals, health, good farming and dietary rules. A large number of moral practical examples and parables are used throughout the text. Educational examples are characterized by two forms: the first represents the so-called positive, following example and a second negative, deterrent example. His use of examples and parables in the textbook is considered as pioneer deed in the development of didactic discipline.

Stylistically, the work alternates the explanatory text with dialogues. The so-called Socratic form is used in dialogues, when basic information is given in the form of an interview (for example, in a mother-child interview) (Sliacky, 1973).

The texts, he has taken from Rochow's books, extend the theme of traditional elementary textbooks to mundane motifs, have an educational perspective and are given a pedagogically more effective perspective than that used in the earlier curriculums and catechisms (Ružička, 1966; Sliacky, 1973).

Until the publication of another reading-book of the Enlightenment era (in 1825), this book was the only universal type of textbook designated for Slovak children. Despite the fact

that Samuel Tešedík made it especially for the children of the Slovaks in Lowland of Kingdom of Hungary, it has become much more famous in Slovakia than in the Lowland. The textbook was condemned by the Lowland's church high officials because Tešedík did not include in the book traditional religious texts (although the true cause probably consisted in the generally hostile attitude of the Lowland's ruling class towards Tešedík's pedagogical and social reforms – as evidenced by the fact that a textbook was ordered in large amounts only in Slovakian part of Kingdom of Hungary, where were used in many ecclesiastical communities; Tešedík's texts were also later adopted by other Slovak curriculums) (Sliacky, 1973; Kmeť, 2005).

3.2 Dean's Adjustment – Instructions of Tešedík, Priest in Szarvas, for Dean or School Remarks, from which Deans, Pastors, Local School Inspectors and Teachers Can Learn (1781)

In this work, Samuel Tešedík summed up his comments about the work of the deans (*the dean* here means the inspector of church schools), but also the pastors, teachers and local school inspectors. He divided his comments and instructions into nine chapters (Čečetka, 1952; Čečetka and Vajcík, 1956).

The first chapter, entitled "Errors and shortcomings of schools, mainly folk schools⁴", deals with all the shortcomings he encountered during his pedagogical work in schools. He appeals to the deans to try to remedy these shortcomings and errors, or to inform the higher institutions and seek redress the wrongs. He reproaches teachers that they teach subjects mechanically, that they are not exemplary for their pupils in their behavior and morality, and that they often use pupils for household chores. Teaching time is sometimes too long and pupils spend many hours at school completely idle. Teaching subjects do not meet people's needs; too much time is devoted to the Latin language and too little, on the contrary, to real subjects. Tešedík finds also many mistakes in textbooks that do not match the abilities and needs of pupils. It also criticizes teaching methods, which, while imposing great demands on the pupil's memory abilities, do not at all develop their judgment and independent thinking. He suggests that more games and rest should be included in the learning process so that children do not get used to the idle way of life and so that their attention will be relaxed. He also suggests that the pupils should become accustomed to stay in nature.

Tešedík devoted the second chapter of the work to teachers. He appeals to the deans to permit only moral and qualified people to the teaching profession. Every candidate must undergo a public examination and prove his/her school reports and references proving his/her integrity. Furthermore, in this chapter, he explains in detail how deans are to assess work of teachers. It emphasizes that the teacher must be able to highlight the need for his/her subject and its importance for society. He also considers it very important whether the teacher uses methods and language appropriate to the age and understanding of the pupils so that they can steadily pay attention. He also suggests that deans should keep records of inspections and teachers and acquaint with them their successors and higher institutions. Furthermore, he advises them to hold meetings (so-called "school conferences"), to which pastors and teachers would be invited, and then take the lessons of these meetings that they will check and assess at further school visits. This chapter concludes with a precise definition of the activities of the deans.

The third chapter of the work deals with pupils. He commands to deans to check how many pupils are placed in the classrooms, whether they are entering school at the right age, or if they are mature enough to enter, whether they left school prematurely, and if so, what is the reason. Tešedík has strong reservations about the fact, that pupils are learning to read from catechism or other religious books. According to him, pupils should learn in appropriate time that there is a big difference between the

reading-book and the Holy Scripture, which they should deal with due respect and without a fuss. He emphasizes the need for reading-books in many of his writings.

The fourth chapter deals with the concept of teaching. The bulk of this chapter consists of different advices. Tešedík advices to teacher to try to root out superstition and prejudices from schools, because these things prevent the truth from being known. Religion needs to be explained cohesively at school and in the church, so close cooperation between the teacher and the parish priest is required. Tešedík also suggests to include in the teaching more real subjects that are necessary for the rural man, which will help him to know the laws of nature and aid him to integrate to and better live in society.

The fifth part of the work is entitled "Morals". The dean should draw up moral principles for school needs and submit them to a higher institution for approval. Once approved, it can be read in the presence of the pastor to the pupils and continuously assesses whether the pupils behave according to them. In case of violation of these principles, the dean must take strict action.

In the sixth chapter, he included instructions for punishing pupils. He urges teachers not to punish those pupils who are diligent, but their skills and abilities are not enough to achieve a good learning outcome. Especially pupils who are wicked and who are lying, stealing or committing other offenses should be punished.

The seventh chapter deals with school prayers and songs. The dean must warn teachers to explain each prayer to the pupils perfectly so that the pupils were aware what they say and not just recite the text mechanically, as it often happens. Similarly, the choice of songs – even during worship service – should be appropriate to the current season of the year.

In eight chapter, Tešedík states guidelines for testing of pupils. The dean should introduce two exams a year in schools – in autumn and in spring.

In the last chapter, he emphasizes the importance and need of activity of deans. Again, he appeals to the creation of close cooperation between teachers and spiritual representatives of the community.

3.3 Twelve sections on Hungarian education (1791)

In this work, Samuel Tešedík again elaborates on his pedagogical principles and advice. This is his proposal for the reform of education, which he submitted to the Regional Study Commission. It is based on the Comenius speech on the spirit of the education named *Oratio de cultura ingeniorum* and it endorses its principle "We are looking for easy ways of learning, although we should rather take care to exclude laziness from schools" ("*Methodos docendi querimus faciles, quum potius hoc agendum esset, ut e scholis pallatur ignavia*") (Čečetka, 1952, 1959).

In this work, he included in the twelve paragraphs his most important views and ideas for the development of the Hungarian education system. He considers it a fundamental idea that pupils should learn not only for the school itself, but primarily for life. Therefore, he is consistently proposing to remove unnecessary subjects from schools, and vice versa, to include in the concept of teaching real subjects, which are necessary for the development and uplifting of the rural man. He criticizes the absence of a real teaching plan, the neglect of physical, civic, economic and politic education. It proposes to develop an economic method of teaching ("practical-economic" as he calls it) with a purposeful school industry. Teaching methods should be taught at teacher training institutes and spread throughout the country. The subject should be taught in such a way that pupils could acquire real knowledge that they can use in real public life. According to Tešedík, practical economic education would eliminate the shortcomings of common teaching methods. In this way, children could prepare for their future profession from an

⁴ As we said before, in English-speaking countries, these schools are known under the term Volksschule.

early age, which would allow them integrate more easily into community.

Tešedík had already applied all these principles and proposals earlier in the establishment of his institute. They also did set off the establishment of other similar types of schools – even though they did not meet the expected interest and understanding in Hungary.

3.4 Analysis of a school textbook for bigger practical and economic rural schools (1793)

This work written by Samuel Tešedík was published under the title *Meine Idee eines Schulbuches für Grössere Praktisch-Ökonomische Landschule* in the journal *Novi ecclesiastico-scholastici Annales Evangelicorum Augustanae et Helveticae Confessionis in Austriaca monarchia* (Engl. New School and Church Chronicles of Evangelicals of Augsburg and Helvetic Confession in the Austrian Monarchy). The magazine was being published by Samuel Ambrosius in Banská Štiavnica (Schemnitz).

In this work, Tešedík made a concrete plan for the compilation of a universal textbook that would serve both school and domestic purposes. In this plan, he strives for creating a kind of draft of content-intensive book that would include a lot of educational information while being also practically focused. Structurally, it proposes to divide this practical knowledge handbook into twelve chapters (Čečetka, 1952, 1959).

He intends to include in the first chapter a “food for thought”, by which he means “observation, memorization and recognition exercise”.

To the second chapter, he assigned the name “physical education”. That should be a guide to knowledge of nature and use of natural resources and its aim should be to prevent prejudices and superstitions. This chapter should also include the basics of knowledge of the human body (anatomy, physiology), but also knowledge of health care (causes of diseases, rules of prevention and home remedies) and dietetics.

The third chapter, entitled “Civic or Political-Economic Education”, should address the needs of the rural man and include instructions for proper cultivation of land, the basics of horticulture, viticulture, livestock production and beekeeping, as well as veterinary medicine. It also recommends to include in this chapter a collection of general laws entitled “village code” and guidelines for writing economic correspondence (drawing up letters, statements, contracts, income tables).

The fourth chapter, aimed at the needs of the Christian, should be called “Christian education” and should draw attention to the dangers of superstitions and should highlight the importance of education. At the same time, it should provide guidance for the good morals of individual walks of life and social classes, and its conclusion should include a summary of the Bible.

In the fifth chapter, Tešedík – in the spirit of his pedagogical conviction – emphasizes the necessity of cooperation between school and family.

The sixth chapter should deal with “weather science” and in the seventh “school laws and instructions about school, village and country police” should be published.

In eight chapter, he says that children should be introduced to “folk songs for all seasons and works”.

He called the ninth chapter “training of young people to diligent work already in school”. This chapter should contain didactic procedures and methods for practical teaching and sorting of particular experiments and work for particular seasons and classes.

In the tenth chapter, he proposes to include instructions for various “children's games”, which develop the knowledge and skills of pupils.

Eleventh chapter should be of particular benefit to adult citizens and should familiarize them with the activities of all publicly beneficial facilities working for the benefit of the countryside (firefighters, insurance companies, poorhouses, police house, grain stores, etc.).

The last chapter should deal with “teaching about speech”.

Although the pioneering plan for this encyclopedic textbook was elaborated and published in the magazine, it was never realized. The thing is that at that time the ruling class's critical attitudes towards the Tešedík Institute and his reforms of social and pedagogical activities were being strengthened. It was not until research in the 20th century that literary scholars found out that this writing by Samuel Tešedík served as an essential source in the compilation of the first encyclopedic reading-book (*Čítanka alebo kniha k čítaní pro mládež ve školách slovanských v městech a dědinách*, engl. Reading-Book or Reading-Book for Youth in Slavic Schools in Towns and Villages), which was published in 1825 in Pest and whose main author was Ján Kollár. Its structure and themes are almost identical to Tešedík's template (Sliacky, 1973).

4 Conclusion

The reforms introduced by Samuel Tešedík in the field of education were certainly the starting point for many of his followers, and many of them were involved in improving the situation and raising the level of Slovak schools. I guess the only Tešedík's idea that did not come true until today is the idea of the high social status of the teacher.

Many contemporaries considered Samuel Tešedík only a utopian. In the end, however, they had to admit that his utopias and fantasies were not at all unrealistic and that many of them had succeeded.

In the field of Slovak and Central European pedagogy he is rightfully entitled to several dominances:

- He proved that his ideas about the education of all social classes are not unrealistic and he was the first to make wider education available to the subjects;
- He wrote the first children's book, which for many years served as a model for different reader-books and curriculums not only in Slovakia, but also in Hungary and Russia;
- Last but not least, he was the founder of vocational education in Hungary;
- His aim was to bring Hungary closer to the developed European countries and today we can say that in many fields, he got ahead of them in his time.
- His agro-industrial institute has become a model for establishing similar educational institutions in many European countries – from Russia to Germany. With its expertise, his school has been considered unique in the world.

Samuel Tešedík created a magnificent pedagogical work during his life, imbued with the ideas of humanism, Christianity and democracy. His pedagogical realism, unlike other his enlightened colleagues, was enriched with the technical and practical component. In his autobiography, while defending the need for his practical institute and institute for teachers, he expressed a very wise and serious idea: “A project is one thing, but who will implement it? This requires cultivated and well-prepared teachers. Good experts with a moral profile.” Even after almost two centuries, this thought had lost none of its wisdom; it points directly to what is missing in today's schools: a practical focus on bringing pupils and students into society in order to confirm the well-known: “We learn not for the school but for life.”

In conclusion, we would like to point out one – in our view – not a very positive fact. While in Hungary, Samuel Tešedík is a “big name” (streets, schools, museums, folklore groups and organizations are named after him; his busts are located in many

institutions and the people with merits in the field of agriculture are being awarded by the plaque of Samuel Tešedík), most Slovak people have not met with his name, yet. With this article, we also wanted to make sure that the name of this giant of Slovak pedagogy will not sink into oblivion.

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TRADITIONS OF THE FAMILY NOVEL «RUSSIAN CANARY» BY DINA RUBINA

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Abstract: The article is analyzed the specifics of refraction tradition family novel and transforming it into a family chronicle in D. Rubin's "Russian Canary". It has been established that, unlike family novels of the 19th-early 20th centuries, which were peculiar to elements of confession, the smallness, the limited framework of the ongoing history of one family, in the A. Ivanov's novel apparent expansion of genre boundaries to family chronicles. Secondly, in "Russian Canary" synthesized elements of family chronicle, socio-psychological and philosophical novels, important significance chronotopical image at home, as well as the motive of the saving of the genus.

Keywords: D. Rubina; genre; novel; motive; chronotope; family novel; family chronicle.

1 Introduction

The diversity of forms of a novel makes it possible to highlight a sufficient number of within certain genre varieties. One of them, in accordance to the established historico-literary tradition, is a family or a family-realist novel. According to Bogdanov, a family novel is "an epos of private life" [Bogdanov 1970, 308]. Initially it was M. M. Bakhtin, who defined a novel as a separate genre, which comprises "significant" features: "the family in a family novel is clearly no longer an idyllic family. It is torn off both, the limited feudal locality and the natural environment, which has been nourishing it<...>. The idyllic unity of place limited by the ancestral familial town house<...>. But even this unity of place is not far compulsory. Moreover, the detachment between life time and, a certain limited special locality, main characters wandering before they happen to find a family and achieve material welfare, form a distinguishing particularity of classical diversity of family novels." [Bakhtin 2012, 478-479]. According to M. M. Bakhtin, the most important characteristics of a family novel consist in obtaining strong family ties by the main character, his determination in the world, limited to a certain "place and a certain close circle of dear people" [Bakhtin 2012, 479]. I. Gnusova rightly points out: "In comparison to European novelists, Russian ones haven't created any classical models of a family novel with its intimate chronotope and narrowly limited issues. But family novel traditions have greatly influenced the history of the Russian literature" [Gnusova 2007], including modern literature.

2 Materials and methods

The genre tradition of a family novel is formed and finally shaped throughout the XIX-early XX centuries, and apparently modified by the beginning of the XXI century. Several stages can be distinguished within this tradition. Firstly, second half of XIX-beginning of XX century – the novels of D. N. Begichev, I. A. Goncharov, I. S. Turgenev, S. T. Aksakov, L. N. Tolstoy, S. Solovyov etc., where the main outstanding features based on family-patriarchal ideals, are easily traced. The distinctive features of a family novel are revealed as well (starting of the confession and the story line are limited by the history of one generation to the tendency of expanding the genre to a family chronicle) [Dzhioeva, Osmukhina 2016, 74-75]. Secondly, 1920-1940-ies., when during "Stalin's time in literature and rhetoric a family with all its proper values of unity, blood ties, community of existence"[Clark] was "a significant attribute". During these years, in Maxim Gorky's, M. Bulgakov's, M. Sholokhov's, V. Shishkov's prose, the elements of family chronicles, socio-psychological and philosophical novels are finally synthesized. The motive of the kind /tribal relations break

up, the images of home / antihome come to prominence. In the third place, 1950-1980-ies., when in the socialist realist novels and short novels by G. Markov, V. Kochetov, V. Zakrutkin, G. Nikolaeva, O. Rudnev, etc. the idea of unity in a "big" family is almost missing [Osmukhina, Gudkova 2018, 165-178]. The prose writers mainly "focus" on the "small", "atomic" family. One of the eternal themes is the death of a family member or another fate" [Clark]. Finally, the turn of XX-XXI centuries, associated with the developing of a family novel into a family Saga, which can be seen in both, the works of so called "serious" writers (remember "the Case of Kukotskiy" or "Ladder of Jacob" by L. Ulitskaya, "the Moscow Saga" by V. Aksenov, "a Dragonfly enlarged to the size of the dog" by O. Slavnikova, "Russian Canary" Dina Rubina), and in the works of mass literature (family saga "Black crow" and "Family album" by D. Veresova, "Captain's children" by A. Berseneva, "Lost Paradise" and "Fearless generation" by A. Lapina, "Children of Vanyukhin" by D. Ryazhsky, "Saga of the poor Goldman" by E. Kolina, "Family secret" by O. Karpovich, "Two destinies" by S. Malkov, "Siberians" by N. Nesterova, "Walking for three streets" by M. Lavrentiev, etc.).

Our appeal to the family Saga genre, is firstly driven by its realization in literary studies of recent decades – just enough to recall the works of A. Bogdanov, A. Tatyana, etc. [Bogdanov 1970; Tatyana 2000]. At the same time, we note that the attention of researchers is mainly focused on the structural and compositional features of the genre of a family novel and family chronicle as its alternative, while the problem of functioning of the family novel, its evolution and transformation in the perception of the twentieth century remains unveiled. Secondly, the great changes that have occurred in the political and socio-cultural spheres of Russia in the last decades, make it essential to reconsider the spiritual and moral values in people's mind. Whereas which is reflected in the given developing of family theme, its impact on the personality formation process in the works of modern Russian prose writers. N. D. Leiderman gave a valid comment that this genre "directly reacts to the aesthetic concept of personality" [Leiderman 2010, p. 42]. The methodological basis of the study was the works by Mikhail Bakhtin on the novel theory and chronotope [Bakhtin 2000]. The analysis of texts is based on the principles of comparative-typological and structural methods.

3 Literature Review

The studies of the family Saga genre by A. Bogdanov, I. Viduetsky, I. Grusovoi, K. Clark, G. Mirsky, E. Nikolsky, O. Osmukhina are of considerable interest. However, a generally accepted definition and typology of the genre of a family novel have not been established in the literary criticism (except the works of E. Nikolsky, devoted to thorough understanding of the subgenre of the family chronicle [Nikolsky 2014]), as well as the terminological justification of its genre varieties (for example, the family saga), but synonymously close definitions have been in effect in the academic literature for more than half a century [Viduetskaya 1976, 206-219].

Thus, the succession of generations through the background of the historical development of the society can be considered as the specific feature of a family chronicle. Based on E. Nikolsky's definition, family chronicle, known as the genre with certain key features, which are "the adherence to the principle of a clear chronology", the use of the linear principle of the narrative, "textually framed" indication of dates, "correlation of the events of the novel and the historical events", the specific markers of an era, being included in the plot, as well as the image of "growing up and aging" of the main characters [Nikolsky 2014, 12]. The most important aspect of the problematics of family chronicles is "the ration of a family history and the history of the society", "the reason for degeneration", "the nature and the world outlook of the

characters are changed under the influence of historical events" [Nikolsky 2014, 12]. The event-related time, the stages of social and "class" history form the family chronicles. They also form "a system of external guidelines while the characters chose this or that life experience" [Nikolsky 2014, 12].

The methodology of our study is based on the principles of Russian comparative historical literary criticism, expressed in the works of A. N. Veselovsky, M. M. Bakhtin, V. M. Zhirmunsky, A. V. Mikhailov, B. V. Tomashevsky and others. We used comparative historical, typological, sociocultural methods as well as the method of holistic analysis of a work of art. Of particular importance in the solution of the tasks for us were the studies of Russian literary historians on the conceptualization of the works of D. Rubina [Afanasyev, Breeva, Osmukhina 2018],

4 Results and Discussions

In our opinion, the traditions of family novel are clearly interpreted in D. Rubina's trilogy "Russian Canary" (novels "Zheltukhin", "Voice", "Prodigal son"). In particular, we are talking about the motives reflection of the family rejection, rejection of family traditions and even creation of family, connection of family history with the history of the state, the whole era. The history of different families is portrayed as a kaleidoscope. These histories fantastically combine various events, cities. Indeed, the geographical "spread" of the trilogy cannot but amaze: Odessa and Alma-Ata, Vienna and Paris, Jerusalem and London, Thailand and beautiful Portofino. The histories of two families are connected, in fact, only by one motive - the legend of Kenar Zheltukhin-the first and the rare old coin in the form of earrings in a strange deaf girl's ears on the beach of a small Thai island of Jum. It was there that Leon, a native of Odessa, and Aya from Alma-Ata met. Almost two books of the trilogy are devoted to how these characters turned out to meet in this place at the same time. In particular, Dina Rubina switches from the description of modern times to immersing into the past. Even though a couple of episodes send the reader to the possible future.

Let us deal with the first book of the trilogy – "Zheltukhin". At first, we read about the history of a hunter from Alma-Ata, Ilya Kablukov, Aya's father, and then Dina Rubina tells the story of the Ettingers from Odessa. The traditions of the family novel are revealed in a rather outstanding way. At first, Dina Rubina depicts the lives of these families filled with various legends, secrets and personal tragedies. This mechanism is inevitable in a family novel, because one can find numerous contradictions and mysteries in the lives of every single family. The longer the history of the family, the more enigmas it has. Ilya lived all his life with a strict and domineering grandmother and was affected by his mother's disappearance. He did not have any clues about his father. Kablukov's description is noteworthy: "And there was no other way for him to be called in the family. Because for many years he had been supplying animals for the Tashkent and Alma-Ata zoo, because this nickname was so becoming to his stringy and dodgy look. There was a trace of a camel's hoof in the shape of squashed gingerbread on his chest, his whole back was slashed by the claws of a snow leopard, and it is needless to say how many times he had been bitten by snakes. But he remained strong and vigorous kind of man in his seventies, when suddenly quite unexpectedly to his relatives, he let himself pass away. For that purpose he just left home and went off to die all by himself just like animals do" [Rubina].

So, in the history of each family there might be members who keep isolated from family traditions, so does Kablukov in the novel. This is the reason why his family regards him as a legend character, there is a mysterious aura full of myths about his personality: "It is difficult to make out, and there is no one to ask why their dad was blown so insatiably, so relentlessly through the Russian Empire. It was only after the collapse of the Soviet power that his grandmother dared to let him in on a "terrible" family secret: their great-grandfather happened to possess a stud,

the only one in Kharkov. "The horse followed him obediently with their heads raised [Rubina].

The motive of family succession and heredity is approached to not even once in the novel. For instance, this is what we learn about Kablukov: "Hearing these words, she would raise her head every single time and, being tall and stately, even in eld, she would make a big step. There was a shade of a horse's gracefulness in this motion".

Now I see, why The hunter is so passionate about horse racing! - Ilya exclaimed once. But, grandmother looked at him with her famous "ivangrozny" look, and he would shut up, so not to grieve the old woman: she was the keeper of the family reputation.

It is quite possible that great-grandfather's seen-it-all cart was bounced and jounced through the country trying to outrace the vagabond's spirit: a gypsy with a triple surname Prokhorov-Marín – Seregin- double surname was apparently not enough- it was his most known distant relative" [Rubina].

Thus, Kablukov's image in the novel is kind of a legend, his life seems to be odd to many family members, and therefore the twists and turns of his fate are so attractive. His life breaks the existing barriers of the everyday routine. Kablukov dared to go against the traditions, which puts him in a completely different role.

In our opinion, in the novel "Zheltukhin" the author advanced the idea of happiness in family life, which lies in simplicity, in getting to know the mission of a family, in spiritual and physical consolidation, in overcoming difficulties, giving birth to children and bringing them up. At times this simplicity is beyond understanding, may be that is why The hunter talks so fondly to his birds, building nests: "the Poetry of family life...". One has to ask if this poetry is intelligible and to what extent.

It is also worth noting that the novel raises the problem of education, growing up. In other words, the novel "Zheltukhin" can be called a novel of growing up.

There is a quirky man, sort of head of the family, a commanding grandmother, who used to keep a check on things: "When in the institute, she was already a retired woman, but kept on "holding in check": she used to turn up in her wine making laboratory, talk over the test results with her students and ex-colleagues, control the chemical glassware". The motive of represented matriarchy is so typical of the Russian reality. It is a woman who sometimes plays a key and leading role in the family, which perfectly describes by D. Rubina: "Since early years Ilyusha had accompanied his grandmother during her "inspections" [Rubina]. He was used to put his palm into the trap of his grandmother's strong and leathery hand – for some reason she always loved to feel the contact; used to listen to grandma's interpretations of the world. By the age of six he had already learnt many different unexpected, unusual and" adult "phenomena of nature and the world". Yet, there is a feeling that there is no this fabled balance in bringing up, when a man and a woman perform their function in the family. This problem extends far below the surface and runs through the entire narrative of the trilogy.

The image of the family and its maintenance as a motive is also presented in the novel. Probably, any family has got members who would care about the family status and its reputation. Grandmother plays this role in the novel "Zheltukhin,": "Grandmother was thoroughly and jealously suppressing the fact that the hunter was a desperate gambler. Everything that was considered to be a "family shame" had been swept under the carpet and would never get a chance to see the light."

Is this attitude right or wrong? Here you cannot help but think that the history of the family is like the history of the country, the whole state or even an era. It cannot be hushed up; it should be preserved for further generations. The history of the family is

complex, contradictory, and this is where its unique charm lies in.

The Ettingers, its lifeline and fate also come to the front line. Its history is also connected to the motive of succession, preserving family traditions: "It goes without saying that since early ears Jacob and Esther had been accustomed to music lessons. Their dad, Gavriła Oskarovich, had always dreamt of having a family band. Like all the children from respectable families, they were studying in public schools: Yasha — in the fourth male, at the corner of Pushkin and Greek street, Esther - in the Second female, at the corner of Staroportofrankovskaya and Trade street (to be mentioned in the parenthesis). Before Yasha reached the age of fifteen Ada Yanovna Rips had lived in their house, she was a distant relative from Memel, who was teaching the children French and German; a plump spinster, prone to sudden panic attacks. She used to shout at the children either in one language or the other".

The Ettingers is a traditional family, in which parents care for the children's well-being, "adjusting" their lives to their own expectations and beliefs: "Gabriel Oskarovich Ettinger could not imagine his children's future without music and the stage, the exciting gloom of the backstage, with its wonderful dust mist, smells and sounds, far pre-chorus baritone, the cacophony of instruments, the sobs of the wardrobe mistress, a moment ago having been called, the "clumsy idiot"... by the diva; the festive hum of a lively audience filling the big hall, — that genuine hum, mingling with the orchestra; its sprouts and ears like the spring grass. So, Yasha started playing the cello" [Rubina].

However, there are some characters, who revolt against this due. Yasha turns out to be one of them. He is suddenly carried away by the revolutionary ideas. In my opinion, Yasha's fate proves that no family traditions and values can save a person from moral disorder, and the more you impose your will on the children, the stronger their protest is: "There had been a sudden, unexpected and inexplicable change in Yasha's behavior. As they say in Odessa "z zihav ". The boy had become absolutely rebel: he would be rude to his mother, in the kitchen he would inappropriately speak to Stesha, waving his long hands, telling her about some "equal rights of free individuals". Sometimes he would disappear for the whole evening to miss the rehearsal. The case of the cello disappeared together with him, while the cello itself remained at home, just like the cocotte, thrown away and shyly bending to the luxurious Italian wallpaper " [Rubina].

The history of the Ettingers is a story of a genuine misunderstanding among the members, the secrets that led to the family's rooting out, because Leon's great-grandmother, Stesha, had given birth to the only daughter. Both big Ettinger and his son could be fathers. When already an adult Leon experienced a real shock after his light-minded mom had thrown light on the nationality of his father. Rubina underlines that none of the main characters apart from Big Ettinger have their own families. Eska, a young lady, who used to be fresh and attractive shaded her blossoms; Stesha after performing the duty of the Ettingers' extinction didn't even think of entering into a marriage; Leon's mother Vladka crazy as she might seem, was not for real family life. There is the lonely hunter Kablukov in Alma-Ata, his lonely sister, Igor, widowed on the day his daughter was born. Such family default goes to the crisis of conscience. It was mentioned earlier that the signs of a crisis are often well-traced in family novels. Dina Rubina's trilogy is not an exception. All existing in the XX century mental contradictions are vividly depicted by the author. There is still hope for the revival of family values, because after all, both of the kinds managed to survive, not to split up, they preserved the family legends, relics, close blood ties. They managed to survive despite the events of the revolution, the war, the collapse of the Soviet Union. Due-to-day historical and geographical realities change, the characters live, die, the life goes on. And every single family is part of this life puzzle.

The most important motive of each family novel is love. In Dina Rubina's trilogy it is shown by the story of Leon and Aya.

Leon performs the task of the security services travelling to Thailand in search of Andrew Krushevich. On the beach of the island of Jum he meets a deaf photographer-girl Aya, who mentions "faceted glasses" and the name of Zheltukhin. She says that he has been stuck in her memory since they first met. The singer is interested in the girl after hearing the symbolic names from the history of his family. The main characters unwind the scroll of their families' past and, finally, agree on the starting point - Nicholay Kablukov who gave Esther Ettinger canary Zheltukhin. The characters are the successors of the incredible mystical connection of two families: "Zheltukhin tied them, uncle Kolya, the hunter and "faceted glasses"... These two young people drift themselves into an affair.

The lovers travel on Leon's yacht, telling each other about their past and their families. Aya reminds of Vladka in her manner to speak much and incessantly, with the only difference that Aya always tells the truth. Aya looks back at her life in London in uncle's Friedrich family. She recalls his wife Elena, who disliked her; Bertha, the maid, whom she had a soft spot for. Bertha knew Mukhan and the German lady Gertrude. Bertha told the girl about Friedrich parents' love story – a German lady and a Kazakh soldier who had saved her from rape abuse. After running away from them, the girl travelled over half the world with a camera in hand. She inherited a passion for vagrancy from her grandmother. In her laptop, Aya has the whole series of photographs - she calls them stories, and all of them are highly artistic.

Leon realizes that this girl is his kindred spirit and she is valorous: "How much courage, strength and efforts it requires..."[Rubina]. He is not keen on getting closer, for he is afraid to be deceived, but the girl manages to melt his frozen spirit. From Aya's story about her uncle Frederick Leon drives a conclusion that he is no other than Kazakh, Krushevich's companion, specializing in illegal arms and plutonium trade and wanted by the intelligence services. The heroes split up forever as they think. Leon reports about Kazakh to intelligence service. It is obvious that the history of different families is connected at some point, because these are common memories, family secrets, incomprehensible, almost mystical ties, which have been stretched through generations and unite the main characters. Leon and Aya are alike not only outwardly, they have got internal relationship. We witness a unique love story of a successful singer, the owner of a rare countertenor voice and a deaf girl, a tramp and a photographer by vocation.

The tragedy and drama of the given situation is reinforced by the fact that Aya cannot get to know Leon's talent, she is cut off the world of sounds, and has to read by the lips. While for Leon, music is his *raison d'être*. Aya is more like her own master, she is not aware of the routine, she doesn't need comfort, she lives for the moment, getting to know the world and herself. Leon's first image is an esthete, who values comfort and the antique. His second image – an experienced, ruthless and undercover agent of the Israeli security services. As it seems, they have got so little in common, and different objectives in life. Yet, there is something, that unites them. It comes down to the motive of homelessness, loneliness, isolation of one's family. They have been forced to fight the world since youth, they are distinct in their inner isolation. They are good at dissimulating their feelings and family secrets.

For another reason it is absolutely fair to call them "escapees". Aya is a happenstance witness and by the twist of fate a distant relative of the "death merchants", whom the intelligence services have been chasing for a long time. Leon dreamt to focus on his career of a singer, because he had spent many precious years fighting extremists. But what about Aya, his "deaf as a stone", his skinny with teeny-tiny nipples, his Queen of glory with swallow brows, his angel, his obsession and demonic temptation, his keen love, his pain? This pain will be endless, because Aya will never be able to hear his voice, the reason for being. Leon takes on the role of Aya's defender, he makes up his mind to stand up to the circumstances all by himself. Therefore, the main character decides to discharge one

more duty-to prevent the delivery of the radioactive stuff for the "evil bomb". He realizes that this mission will be his retirement, then, he will devote the whole life for freedom, love, and music.

Many critics fairly point out, that Dina Rubina's prose, shows genuine interest in a personality, and it makes no difference whether this personality is a main character or a utility one, but playing its indispensable role in the novel. For example, the flamboyant dressmaker Polina Ernestovna, the creator of her lady's eternal "Vienna wardrobe", the remains of which Leon still keeps and even uses on occasion; or the canary man Morkovny from Alma-Ata; or the inhabitants of the densely populated Odessa communal flat, which wholly belonged to the Ettingers; or Button Lu – a tiny Ethiopian, a Parisian antiquary, a former pirate, a former Marxist, a former Russian linguist. All mentioned above are connected with the traditions of the family novel, because the history of any family is formed of the stories of its individuals. The history of the family is a holistic phenomenon, which is to be known in the context of both spiritual culture and the history of the era, the state... this is perfectly illustrated by the trilogy of Dina Rubina.

The main characters of Dina Rubina are always obsessed and gifted. Their devotion towards the favorite occupation is all absorbing, and the author is also prepossessed by this feeling. The better she knows the drill, the more detailed and fondly her story is. She gives a detailed and friendly illustration of small things and professional secrets. From one novel to another we can observe that Dina Rubina is "mastering" more and more new professions. There is a feeling that the author happened to be a sculptor, an artist, a puppeteer, that she invented fantastic tricks with a motorcycle under the dome of the circus, performed scams with faked paintings or even was a member of Tashkent thieves' gang. Some writers focus on the emotional experience of their characters, others write about the astounding adventures, but nothing is said about their occupations. What makes Rubina's prose true to life is that apart from all mentioned above, her characters are absorbed in their work and hobbies – because real life is not only about "sharing kisses on the beach". The reader is automatically captured by other people's business, jobs and creative work. Sometimes this creative work becomes a guiding line for the whole family as it is for the Ettingers.

Also, the family itself seems to be creative substance, having certain secret forces, which determine the fate of its representatives. Perhaps that is why Dina Rubina so often emphasizes the mystical aspect in the fate of the family in the trilogy "Russian Canary". As there is someone invisible up above, knitting the fates into an elaborate pattern, which reflects not only the history of the country, but of the whole mankind. Dina Rubina's narrative is remarkable for its immensity. After reading the trilogy one feels how significant the fate of every individual family is. Moreover, every family unit is perceived as a microcosm with its own rules and restrictions.

Love experience as well as young love make up another important stage of character education. Being in love people demonstrate their natural character as well as some personal traits acquired in the childhood and adolescence. In fact, the first love experience can change a person for the better, make him become sincerer, more open and less selfish. Dina Rubina, following the manner of other authors pays special attention to the relationship between a man and a woman. Love, though is a struggle of two personalities, seeking to create an ideal, and never ending disappointment after not finding it. Dina Rubina develops the idea that the relationship between a man and a woman must be complemented by a deeply mystical relationship between a man and a man.

Dina Rubina's characters often fail during building of an ideal relationship. When there is physical satisfaction, the spiritual intimacy and human understanding are missing. Most people accept this missing "link", they raise a family hoping that someday they will feel happy in marriage but as a rule, over years there is a gulf of misunderstanding between people, and

physical attraction cannot compensate for mental suffering. As a result, the family acquires mutual resentment and misunderstanding. So, another phase in the process of personality development is the creation of one's own family. At this stage, there are challenges and difficulties, and, most importantly, there is a sense of responsibility not only for yourself but also for another person.

In the novel, family life is the basis of human existence, in the alliance of any couple a man can show his true masculine qualities and a woman – feminine ones. Ideally, together they should create a union based on harmony. Now they are already together- a husband and wife get to know the world, themselves, acquire a new reason for living. In the trilogy, there are some characters who are not able to join this stage of personality development, due to many circumstances, they cannot create a family, they beat up and down, looking for a place under the sun. Their parents pass away, nothing is left, but the emptiness.

The process of self-determination plays an important role in the personality growth. It is important not to miss the right time for self orientation, disclosing the talents. Self-determination, closely related to the process of self –actualization, is one of the most important stages of the education of an individual. It is time for search, self-analysis, as a result, person begins to know himself better. The writer emphasizes that this process is not simple and often painful, but extremely necessary. It is very important for the person not to be afraid of difficulties, not to depart from one's intentions to find the right way in life. Mistakes might be crucial. Making wrong choices can ruin the previous efforts, lead to the degradation of the individual, the loss of life guidelines and moral values.

It should be noted, that Dina Rubina holds the idea that "consciousness is the main enemy of man - his daily consciousness "[Rubina], while the dark, "instinctive" side of the soul should guide the personality, giving it the opportunity to achieve harmony with the world around. Aya and Leon are such characters to some extent.

Of course, in Dina Rubina's trilogy the role of interaction between people and the nature, their unity is fundamental: only when a person feels part of nature, he can grow personally. The civilization cannot provide a person with everything, "the world is even more immeasurable and complex than we can imagine; people have to break out of the power of banality, devastating their lives, and recognize this mystical "otherworldly" universe" [Rubina], this is what most characters called of the trilogy call on, Kablukov, in particular, watching his canaries with such love.

A man is an individual, and everyone insists on his exceptionality. According to Rubina, this is a mysterious state of life. That's why she sees a hero as a complex of reproducible relations "identities" and "differences", general and special, things expressed directly or indirectly, perceived and deeply felt by the character or existing at the level of the instincts and intuition. That is why the main element of the writer's artistic system is understood in a new way.

Even before Dina Rubina's works family psychological prose tackled the mismatch, the unpredictability of the character. The psychological novel came up as a combination of suddenness (paradoxical) and regularity, and its characteristics was regarded as a dynamic, multidimensional system, where the derived features, arose from the primary, social, biological and psychological premises. The concept of "psychological insight" is broad and multilateral. In literary criticism the traditions of tackling people's inner world and private life within psychological and literary context and their analysis in terms of Freudian and neo-Freudian attitudes are strong and stable. The problem of psychological insight covers the study of the inner world of a personality, the forms of psychological process, the image of the psychological state of a person. So, the concept of personality is of paramount significance in ascertainment of the relation between psychological insight and the writer's creative

method. Of course, psychological insight is the most important and distinguishing feature of the Russian family novel.

The study of the psychological insight concept in connection with the principles of a character revelation shows the conditionality of the psychological analysis of the general philosophical position of the writer in a realistic novel. Through the psychological analysis moral values and human ideals are defended. The process of penetration into the psychology of a personality, the aesthetic analysis of the inner world, the confirmation of the humanistic ideal leads to the appearance of realistic features in Dina Rubina's method.

Dina Rubina shows that despite of all the difficulties and contradictions, cataclysms and conflicts in a life of a person or a family, nothing is left, but to settle down and live. For Rubina, the primary origin of a man is biological and psychological one, which is subjected to the correlating effects of external forces to a lesser degree. One can see a strange combination of the instinctive motives, primitive, but at the same time beautiful in their natural simplicity, which are inexplicable and associated with the mythical and dark side of one's mind. And all mentioned above influences the history of the family.

For Dina Rubina, the problems of civilization are always focused on the problems of personal family relations. The civilization drawn by rubies is tested for strength and positive meaning by the human family factor. Dina Rubina's draws a parallel between the problems of civilization and the issues of personal family relations. The civilization depicted by Rubina is checked for strength and positivity by human family factor. Rubina's novel offers the readers a unique inside look upon the battles, misfortunes and victories of representatives of different families. In addition, the civilization and its level of development in the novel are interpreted as a kind of unity of internal and external in a man. That is why the natural, physical world plays such an important role in Dina Rubina's poetics and that's why she is so sensitive to the nature. The reader can't help paying attention to the details of the living environment of the characters to the way the writer appeals to the colors and the descriptions of the atmosphere.

The ending of the trilogy is symbolic and familial. The annual music festival takes place at St. Mary's Abbey, near the Israeli village of Abu Ghosh near Jerusalem. The oratorio "the Prodigal son" is sung by the famous countertenor Leon Ettinger with his eight-year-old son Gavriila. He looks a bit like Leon, but without his father's fury. He resembles rather big Ettinger-Herzl. The hall is full house. Magda, who is here, is thinking about the vicissitudes of fate and nature. One son, Leon, is gifted with the beautiful voice and acute hearing, the other is deprived of any talent. She is sorry that Meir will never let the children to be put in touch. She admires Aya, accepting the fact that the singer is happy with her. Aya meets Shauli at the airport who has arrived to listen to the oratorio. On the way to the Abbey, the heroine enthusiastically talks about her work as a documentary filmmaker. The old bachelor, Shauli admires Aya and is jealous of Leon. He compares the heroine to the biblical Ruth, a symbol of righteousness and devotion to his family. On the stage "soars, weaving, the Duo of two high voices... Two figures, Leon and the boy, standing so close to each other, as if fused, in an indissoluble connection of two voices lead the party of one rebellious, but reconciled soul..." [Rubina]. Aye seems to hear her husband and son's singing. The heroine recalls that when Gavrik was small, she and her husband heard each other, holding the heels of the baby, and called him "the conductor of happiness" [Rubina]. Again, returning to the origins, to the family, to the continuation of the family, to all that was and probably will always be the meaning of human existence.

5 Summary

Summarizing the above, it remains to emphasize that the "Russian Canary" reflects the process of transformation of the family novel (while maintaining its most important characteristics, such as the linearity of the narrative, chronicity

and attachment to one place of action and development of the plot, the image of the house, the family hearth, as a genre-forming element) into the family chronicle, due to the expansion of the narrative framework, the construction of the epic chronotope, the comprehension of separate destinies against the historical background. At the same time, not only the social and historical events, but first of all personal morality as the morality of the kind, moral values of the family become guidelines in the walk of life. The writer is particular not just about the pedigree and the childhood of his characters, but obviously focuses on the socio-historical component of their destinies. In our opinion, it is the theme of genealogy, which allows Rubina to trace the historical and social predetermination of many mental and spiritual traits of the characters. In the novel "Russian Canary" the history of the family, often marked by conflicts, severance of ties, becomes a reflection of the history of the country as a whole, the family in the "big" history remains the dominant category.

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EARNING VALUE APPROACH VS. ASSET-BASED APPROACH VALUATION OF A BUSINESS

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Abstract: An appraiser has many valuation methods available for valuing companies. The right choice of the method used is very important to achieve the right result. The aim of our paper is to compare the view of a self-employed person and a third rational person on the result of valuing the self-employed person's business using the earning value method. To evaluate the business of the freelancer, tax returns and cash diaries are used as input data. Furthermore, the views of both parties on the value of self-employed business determined using the earning value method are discussed. Two conclusions are reached. (1) In the event of valuing a business, it is not possible from the view point of a rational person to identify all the value-creating factors that are often crucial for the freelancer. (2) A negative value of an enterprise determined using the earning value method may not always mean an error of the appraiser. The idea of two different perspectives on the value of a company is demonstrated on a model example of valuing a self-employed person.

Keywords: self-employed person, business valuation, investor, earning value method, asset-based valuation method, negative value of a business

1 Introduction

There are a number of valuation methods available to determine the value of a company; it is always necessary to select one or more which are most suitable, taking into account the circumstances of the valuation. Their choice depends on the specific characteristics of the company that is the subject of the valuation and the purpose for which the valuation is to be processed (Rowland et al., 2019). This also applies when the subject of the valuation is a business activity carried out by a self-employed natural person (self-employed person, freelancer). A self-employed person is a natural person who carries out a systematic activity, the aim of which is to make a profit. In the course of pursuing this activity, the self-employed person has to make many decisions that have a direct impact on the amount of income from such activity. Unlike a company, however, a self-employed person has more time to make a decision than joint-stock companies, as they are forced to make quick decisions due to movements in the value of shares on stock exchanges (Park and Kim, 1997).

In the case of valuation of a company, it is usually desirable to look at the valued company from the perspective of an independent third party, particularly in such situations where the valuation simulates the possible sale of the company (Stehel, Hejda and Vochozka, 2019).

The key factor in choosing the valuation method is whether the assessed company qualifies as a going concern. If this assumption is met, one of the earning value methods is usually used to evaluate the company. In some cases, however, other hidden (non-financially expressed) values, which are usually relevant only to the business operators, may not be taken into account while using the yield valuation method. For this reason, the earning value of the company based on the input data might be set at zero or even negative – that is when valued from the perspective of an independent third party (Vochozka, Stehel and Rowland, 2019). In such case, the common next step is to choose the asset-based valuation method, which achieves a positive value of the company for most valued companies. It is nonetheless also possible to achieve a negative or zero value of the company using the asset-based valuation method. It concerns companies that do not have any earning potential in the future, and in many cases have some additional financial burden – debts, etc. (Vochozka, Rowland and Šuleř, 2019).

The aim of this paper is to determine the value of a company – a natural (self-employed) person – using the earning valuation method, with subsequent comparison of the views of the entrepreneur and a potential investor, as an independent rational person, on the value of the company estimated using this method. The different views of the two parties will be explained in the ensuing discussion. The situation will be simulated on a model company – a business run by a self-employed person.

2 Literature Review

The entrepreneurship of the self-employed is very specific in many respects. These mainly concern work habits and attitude to the entrusted job. In some companies, such people play a key role that is essential for the functioning of the whole company. The advantage of the employment relationship between the company and the self-employed is often perceived as the greater degree of flexibility in mutual cooperation. It is also necessary to take into account the different performances of employees and self-employed persons. Although the self-employed might not be an expert for the employing company, this deficiency can be eliminated mainly by the self-employed. Working as a freelancer across several companies also has the advantage of developing skills in several fields and directions at once (Huckman and Pisano, 2006).

The decision of an individual to do business as a self-employed person is perceived as a very positive way to the personal development of each entrepreneur. Such decision forces the entrepreneur to fully immerse in the entrepreneurial approach to solving all problems and issues, as these decisions (internal factors) influence the amount of profits (Opait, Damian and Capatina, 2019). According to Suss and Becker (2013), one of the external factors that influences the amount of profits is the level of total employment in a particular country. Gold and Mustafa (2013) examined the work ethic of self-employed people who work as external workforce in a company. Every self-employed person always tries to find a balance between work and family time. For this reason, self-employed people often work late and their working hours are very irregular. At some point, however, the family always wins over the work, since their business is perceived as a way of making a living and ensuring sufficient funds for all other family members. Occasionally, excessive work can however have a negative effect on their personal lives. According to Grugulis and Stoyanov (2011), starting a business is a very effective tool for gaining the necessary practice after graduation. Some companies are equipped with a program for employing recent graduates, but this is not always the case. In other cases, companies are more interested in employees who have already a good command of their field and can thus generate a profit straight away.

Becoming self-employed can thus be an excellent means for graduates to gain the required experience and increase their chances of obtaining a position in a stable job in the future. Suss and Becker (2013) add that the implementation of the self-employed in a stable society, operating for example in IT, is shaped by technical, social, and networking competencies. In the case of implementation of self-employed persons, in the company's work team, it is also necessary to assess the degree of loyalty, which the self-employed are able to show to the companies. Suss (2006) concluded that in the case of a stable company offering cooperation to the self-employed, the level of loyalty to the company is very high. However, it is necessary to take into account the correlation of all requirements, expectations, and working conditions that are expected by both parties, which will thus establish an employment relationship.

Nowadays, in the online world, self-employed people have an opportunity to work together to achieve common goals. In some cases, collective organizations are set up for such purpose, where a group of external workers jointly solve a specific problem. In addition, present technology allows individual workers from

different parts of the world to work together from the comfort of their homes. Thus even low-skilled workers can be connected, and derive valuable information from these connections for their personal development. The resulting work can therefore be done more efficiently and better than in a company environment (Wood, Lehdonvirta and Graham, 2018). Ferriani, Cattani and Baden-Fuller (2009) examined the performance of self-employed collective organizations. According to their conclusions, it is clear that the performance of such organizations, alike the performance of the work team for an employee, depends on the cohesiveness of the entire work team. Every member who joins or leaves the self-employed collective organization disrupts this collective cohesion, which is also reflected in performance reduction of the entire collective organization. Malone and Laubacher (1998) describe the connection of the self-employed via the Internet as a development of E-lance economy.

Platman (2004) states that the decline in the rate of economic activity among the elderly can be compensated if they decide to start a business. The elderly generally prefer flexible working hours and more variable ways of doing work. Many of them have gained a lot of experience over the years, therefore they can put this experience to good use in form of counselling for other businesses or individuals.

Kitching (2015) focused on the development in the number of people making living as a self-employed person in the United Kingdom. According to his results, it is apparent that during the years 1992-2015 there was a large increase in the number of job positions. Parallel to that, there was also an increase in the number of self-employed persons. This could also be the reason why the demand for external workers from companies in all sectors increased in the monitored years.

From the point of view of the investor, as an independent rational person who would decide to buy a company operated by a self-employed person, it is necessary to determine the earning potential of the operated company. Zhao (2009) states that with the faster-growing world economy, investor opportunities are ever growing.

New start-ups are of interest to many investors, who can use them to increase their assets. According to Miáčková and Gavřáková (2013), the company's earning value is a key indicator for investors, owners, and creditors. Determining the value of a company also contributes to further decisions about the way of its management, formation and further increase of its value.

When potential investors make decision to invest in a particular company, they usually evaluate its financial indicators. They are primarily interested in the amount of profit generated, the book value of the company and the amount of free cash flow. However, according to Amir and Lev (1996), this information may not be relevant in order to provide the investor with comprehensive information on the basis of which they can estimate the amount of his future profits in the event of the investment.

From the investor's point of view, among the relevant information that indicate the degree of revaluation of the invested funds should also be certain non-financial indicators of the company, such as the degree of the market penetration. Only the combination of financial and non-financial indicators provides the investor with accurate data to determine the future value of their investments.

The investor achieves the best return on their investment if he or she subsequently becomes the sole owner of the business. Assuming that real estate is also acquired with the ownership, according to Krulický and Horák (2019) such real estate can be viewed as an investment asset.

From different perspectives, investors can be divided into speculators and long-term investors. Speculators invest their

funds in specific sectors with the expectation that the value of these companies will increase over time due to an expected event. Long-term investors divide their funds into more companies over a longer period of time. Clark-Murphy and Soutar (2004) state that 99% of all investors are long-term investors. There are very few speculators in this area.

When valuing companies, their business model, which allows companies to invest in research and development, and its history are always looked at. This model should always be adapted to current needs and market behaviour. The ability to swiftly react to these changes by innovating the business model is one of the most appreciated non-financial indicators (Amit and Zott, 2012).

Rajnoha, Novak and Merkova (2016) focused on business performance in companies and in the area of measuring and managing investments. They examined whether individual methods of valuing investments in the company, or the synthesis of several of these methods, have a positive effect on the company's performance.

Yermack (1996) states that companies with fewer executives achieve higher market value when sold. Companies with simpler management structures also create a more favourable environment for employees due to reduced stress from losing their job position, and employees of such companies are thus able to achieve higher performance, which is evident from the financial statements. These companies thus become companies with high earning potential for investors.

In valuation practice, it is most common to determine the market value of the evaluated company. In recent years, companies have been frequently changing their forms of business. This may be very unfavourable for potential investors, and it can cause distortion of historical company data. In such case, it is possible to use the Discounted Cash Flow method, which can overcome aforementioned difficulties (Schnorrenberger et al., 2015).

3 Materials and methods

First, an analysis will be performed, concerning all background materials available to determine the value of a self-employed model trade. Following the necessary corrections, the valuation itself will be carried out using the earning valuation method from the perspective of a third independent rational person (investor). If the value of the model trade of a self-employed person determined by this method is zero or negative, it will be valued using the asset-based valuation method. Subsequently, various views will be discussed from the perspective of the freelancer as well as a potential investor who would consider buying the created company. A self-employed person provided all available data on the trade functioning in order to create this article. The data will be analysed as a matter of priority, and corrected – if necessary – for the use of selected valuation methods.

The model trade operates in the area of chemist's products sales. The self-employed person runs the trade in a multi-storey property, which he is also owns. The business premises are situated on the ground floor of this property. On the other floors there are housing units, which are rented out as flats. The model trade valuation will be performed as of September 30, 2008.

Earning valuation methods are focused on the future state and development of the company and its ability to generate profit (revenue) for its owner. Depending on the choice of valuation method, the future operation of the assessed company can be viewed in one or more phases. Applying the so-called multi-phase future of the company places high demands on the data as well as their processor. Therefore the valuator is usually given only a one-phase or a two-phase view of the future; that is, a view of the future operation of the company as strongly stable, or as stabilizing for several years and estimating its further viability.

In our model case, the one-phase view of the future functioning will be applied, with special regard to the available information and data on the history of the model company.

The future image of the company will be based on adjusted financial results of previous years. Based on a preliminary analysis of the input data, it was found that the trade owner did not pay himself an appropriate wage for his work, but only used a part of the profit share that the trade was able to generate. Based on this fact, it will be necessary to make a correction of past financial results from the years preceding the valuation date (September 30, 2008). Specifically, these will be the years 2005, 2006, 2007 and the period from 1 January 2008 to 30 September 2008. However, for the purposes of valuation in 2008 there is available only a money diary kept by the freelancer.

The first necessary correction of the economic results will therefore concern establishing an average wage for fictitious employees who, due to the nature of the business, would work as a cashier and a shop manager in charge of all jobs related to ensuring a smooth sale of goods. For this reason, two average wages (cashier + shop manager) will be considered when implementing the financial plan correction.

The data for the simulated wages, which will be added to the costs of the company XYZ, will be drawn from the database of the Czech Statistical Office (CSO). Based on the data, a simulation will be performed to estimate an average gross monthly wage of two workers in the trade section (CZ NACE Register of Economic Entities 45, 46, 47).

Further background analysis revealed that the self-employed person does not comply with the principle of proper management from the point of view of an independent third party concerning the rent of the housing units in the rest of the owned property. This conclusion was reached on the basis of the financial consideration required from the tenants. The amount required does not correspond to the usual amount of financial consideration based on the current state of the real estate market. Therefore, an adjustment will be made to the amount of financial consideration collected for the rent of these properties in order to comply with the principles of good economy. The deduction of collected financial consideration from the rent of the real estate for previous years will be made, and subsequently the amount of financial consideration corresponding to the state of the real estate market in the given year and location will be added.

To determine the amount of standard rental price for the years 2005-2008, it will be necessary to express the past value of the rent. This will be done by deducting the inflation from the given years from the current standard rent. The value of year-on-year inflation will be taken from the CZSO (2020). To express the past value of market rent, the mathematical model "interest decharger" calculated according to formula No. 1 will be used:

$$SH = BH * (1 + i)^{-n}, \quad (1)$$

where: SH – current value,
 BH – future value,
 i – interest rate,
 n – number of time periods.

Based on the determined amount of the simulated wage and the amount of rent for all years, the economic results of XYZ will be corrected.

After the correction of the input data, the value of the company XYZ will be determined using the earning value method, specifically the method of capitalized net income in the variant of flat rate calculation. This method is chosen on the assumption of further uninterrupted continuation of the activities of the self-employed person, i.e. following the principle of "going concern" and its earning potential. The calculation of the value of the business operated by the self-employed person using the earning value method will be calculated using formula No. 2.

$$HP = \frac{T\check{C}V}{i_k}, \quad (2)$$

where: HP – value of the business,
 $T\check{C}V$ – distributable net income,
 i_k – calculated interest rate.

The distributable net income will be calculated using formula No. 3.

$$T\check{C}V = \frac{\sum_{t=1}^K q_t \check{C}V_t}{\sum_{t=1}^K q_t}, \quad (3)$$

where: $\check{C}V_t$ – past adjusted net income,
 q_t – weights that determine the significance of net income in a particular prior year for estimating the future distributable net income,
 K – the number of previous years included in the calculation.

Following that, it will be necessary to assign individual weights to the financial plan, compiled on the basis of adjusted data from previous years of self-employment, according to their importance, which decreases with increasing time interval from the valuation date. By choosing these weights, the degree of influence of the adjusted profit from previous years on the value of the company as of the date of its valuation will be adjusted.

Before calculating the value of the business operated by the self-employed person using the earning value method, it will be necessary to determine the amount of the calculated interest rate. In the case of self-employment, the calculated interest rate represents an alternative cost of equity (r_e). The indicator of alternative costs of equity and the possibilities of its use are described in detail by Vochozka and Rousek (2011). The modular method will be used to determine it. The input data for the r_e calculation will come from the data of the Czech National Bank (CNB, 2020) and the data of the Ministry of Industry and Trade (MPO, 2016). The calculation of the amount of alternative costs of equity will be based on the identification of possible risks for the self-employed and the subsequent sum of several partial risk surcharges and the risk-free rate of return on long-term government bonds.

The inflation target of the Czech Republic will also be taken into account. Finally, the risk premium for the specific risk will also be taken into account. The calculation itself will be performed according to formula No. 4.

$$r_e = r_f + r_{pod} - inflace + r_{spec}, \quad (4)$$

where: r_e – alternative cost of equity,
 r_f – risk-free return,
 r_{pod} – risk premium for self-employment risk,
 r_{spec} – specific risk premium.

Subsequently, the amount of permanently deductible net income will be determined according to formula No. 3, and then the value of the self-employed operated business will be determined using the earning value method according to formula No. 2.

From the view point of an independent third party, the general assumption of a long-term zero or negative earning value of the company is the termination of business activities. In such case, its value is determined using the asset-based value method and sold for the amount thus determined, i.e. the principle of "going concern" is refuted, the termination of business activities assumed, and the company sold as individual assets or in parts.

The asset-based value method expresses the immediate value of the company at the valuation date, estimates the company's assets at market value and revises the company's liabilities incurred before the valuation date. This valuation method is used particularly when it is not possible to comply with the principle of "going concern". This means that such a company no longer

has any future earning potential for a potential investor, and in such case it is appropriate to sell the company for financial consideration, the amount of which corresponds to the sum of the market price of the company's assets. Asset-based value methods are recommended especially in cases where the company's earning potential is low or cannot be reliably determined.

The value of the company's goodwill can be obtained by the difference between the earning value and the asset-based value of the company. Determining the goodwill value of companies was addressed, for example, by Podhorská et al. (2019).

4 Result

First, an analysis of all available background data provided by a self-employed person was performed. Based on this analysis, it was found that the business owner did not pay himself an appropriate wage for his work, which would be deserved for the operation of his business, or else should belong to another person doing the job. In order to maintain the perspective of an independent third party, which is necessary for the purposes of the valuation, a simulation of the wage costs was performed as it would be paid by this third party as the business owner should they hire employees to run the chemist's shop. Thus, the business owner could fully focus on performing his role as the investor/ strategist and the main leader.

Czech Statistical Office (CSO, 2020) data were used to simulate the amount of wage costs. Table 1 shows the development of average labour costs, according to the relevant industry and the corresponding year.

Tab. 1: Determining simulated yearly wage costs

Year	2005	2006	2007	30/9 2008
Average gross wage (CZK)	16,421	17,471	19,097	20,702
Social insurance rate	9%	9%	9%	9%
Health insurance rate	26%	26%	26%	26%
Total monthly cost per employee (CZK)	22,168	23,586	25,780	27,947
Annual cost for two employees (CZK)	532,042	566,075	618,733	251,528

Source: CSO (2020).

In the financial plan, the amount of simulated annual wage costs for two employees was added to the costs necessary for maintaining further operation of the self-employed business, when viewed from the valuation perspective of an independent investor.

After further analysis of the background data, the amount was adjusted by financial consideration that would have belonged to the freelancer for renting out the housing units in his real estate. The disproportionately low payments collected for the rent in previous years was deducted, and at the same time a financial consideration was added in the amount corresponding to the state of the real estate market in the given year and locality.

Formula No. 1 was used to determine the usual rent price for the years 2005-2008. Five units of similar size and locality were found and used for comparison. Based on the market prices of similar housing units traced through real estate advertising servers, the usual market rent in 2013 was determined at CZK 5,000 without energy per unit. The owner demanded financial consideration in the amount of CZK 500 as energy fees. Therefore, the total amount of market rent was set at CZK 5,500. Table 2 shows the determined amount of market rent from the years 2005-2013.

Tab. 2: The amount of market rent for one housing unit

Year	Inflation (%)	Market Rent (CZK)
2013	1.40	5,500
2012	3.30	5,424
2011	1.90	5,251
2010	1.50	5,153
2009	1.00	5,077
2008	6.30	5,026
2007	2.80	4,729
2006	2.50	4,600
2005	1.90	4,488

Source: CSO (2016); own.

Based on Table 2, it was found that in 2005 the self-employed person collected CZK 85,392 less for the rent of the two owned housing units than was the real market rent that year. In 2006, it was a potentially lost profit of CZK 88,075 and in 2007 of CZK 91,166. In the period from 1 January 2008 to 30 September 2008, the amount of potential lost was CZK 73,736. Corrections in the financial plans were then made for an average amount of gross wages for two employees in CZ NACE 45, 46 and 47, and the newly determined amount of the usual market rent for two housing units. Table 3 shows the results of the financial plan correction.

Tab. 3: Adjusted economic results (ER) of previous years

Year	2005	2006	2007	30/9/2008
Income (CZK)	7,474,673	6,729,423	6,621,909	3,127,267
Costs (CZK)	6,993,047	6,748,180	5,984,506	2,852,250
ER (CZK)	481,626	-18,757	637,404	275,017
ER after wage cost correction (CZK)	-50,416	-584,832	18,671	23,489
ER after market rent correction (CZK)	34,976	-496,757	109,837	97,225

Source: Own.

The next step was to assign weights to individual years. The result is shown in Table 4. The allocation of weights of individual years was performed using the ranking method, while the year 2007 and part of the year 2008 have the same weight.

Tab. 4: Assignment of weights to individual years for the determination of distributable net income (DNI)

Year	2005	2006	2007	30/9 2008
Adjusted FR (CZK)	34,976	-496,757	109,837	97,225
Weight	1	2	3	3
DNI (CZK)	-37,484			

Source: Own.

According to Table 4, it is evident that the years closer to the date of valuation of the business were assigned higher weights than past years. This is due to the higher impact of recent years on the result of the valuation. Past years no longer have such a great impact on the current value of the business.

Subsequently, the distributable net income could be calculated using formula No. 3, arriving at the amount of CZK -37,484. This suggests that the company does not fulfil the conditions of the "going concern" principle.

Furthermore, to determine the value of the company, the interest rate was calculated using formula No. 4.

The yield of the ten-year government bond of the Czech Republic, according to the Maastricht criterion published by the CNB in July 2016, was 0.37%.

The risk premium for CZ NACE business category G Wholesale, Retail Trade and Repair of Motor Vehicles, published by the Ministry of Industry and Trade on 19 April 2016, was 4.45% for the first three quarters of 2015. According to the CNB, the target inflation in the Czech Republic is 2%.

It was also appropriate to increase the calculated interest rate by one half of the risk premium to express the risk arising from the fact that the key person of the company (self-employed person) currently holds the position of all employees and owners. It can therefore be expected, that his long-term absence would have a significant negative impact on the operation of the shop, or the whole business.

After substituting these values into formula No. 4, we obtain the following relationship:

$$i_k = 0.37 + 4.45 - 2 + 2.23 = 5.05. \quad (5)$$

The amount of the calculated interest rate was set at 5.05%. Using the earning value method, subsequent substitution into formula No. 2 calculated the value of the self-employed business as -742,249 CZK.

Due to the negative result of the business value, it was subsequently assessed with the help of the asset-based method. By summing up all assets and property items that are used for the business operation, the total value was set at CZK 1,926,070. This difference in the use of the earning value and asset-based valuation methods will be discussed in the discussion section.

5 Discussion

When processing a valuation of a company, it is always necessary to take into account the purpose for which the valuation is being processed. As already mentioned, the output of the valuation is usually a so-called objectified value, i.e. a view of a third independent person (investor) on the company as a whole. Krabec (2007) is also inclined to determine the objectified value in the event of company valuation. From this point of view, it is not possible for the operated trade to report a long-term negative value for its owner (self-employed person), or to incur accounting losses in the long run. In such case, the law defines that when equity falls to negative values, such enterprise is considered over-indebted and should cease to exist. In our model case, however, this situation occurred, or more precisely, the negative distributable net income was generated by adjustments to the accounting economic result, and thus represents the expected economic result for a new potential owner – an independent third party.

The negative result of the company value occurred due to non-compliance with the principle of sound management, which was caused by flaws already revealed in the analysis of the input data for calculating the company value using the earning valuation method. The first revealed deficiency was the inefficient use of rented housing units for very low financial consideration, which did not even approach the usual market prices of similar types of real estate in specific previous years. The second adjustment decreasing the achieved economic result was the adjustment of salaries paid for executive and managerial work to the company's employees. From the viewpoint of a third independent rational person, the corrections made are absolutely fundamental and have a significant effect on the resulting value of the company.

The first identified shortcoming in the form of a disproportionately low financial consideration collected from the rent of owned housing units is very specific. From the point of view of a third rational person, there is no reason for the owner of housing units to rent his property without any profit, or at a price lower than usual. In this respect, it could be said that the principle of sound management was not respected by the landlord. This shortcoming was removed by performing a simulation of the common market rental price for similar types of housing units.

The second identified deficiency was eliminated by simulating the amount of wages for employees, which would ensure the smooth operation of the chemist's shop. This is one of the most effective methods of solving such flaws, and very common in the case of the self-employed. The reason is the fact that the self-employed person alone performs the job of the executive, the manager and the business owner. In the case of a standard operating company (Ltd., Plc., etc.), this problem is encountered very rarely in valuation practice.

Overall, from the point of view of a third rational person it is possible to consider these identified deficiencies the main causes of the negative earning value of the model company.

However, it is of high importance to look at the whole problem from the perspective of the self-employed. It is important to realize that, from his point of view, other values are hidden in the activity he carries out, which may be of such importance to him that in his eyes they exceed the negative return value of the business. These can be specific objects of personal value or internal emotional processes, or family ties, which are very valuable for the business owner. In such case the business owner ought to consider whether all these circumstances outweigh the negative value of his trade.

According to the legislation of the Czech Republic, it is the free will of self-employed persons which area of trade they will engage in for the purpose of making a profit. Trades in the Czech Republic are divided into free and regulated. No special permits or documentation of the necessary knowledge is required to operate free trades. On contrary, it is required for regulated trades. As a rule, these are trades involving activities that can endanger the life of the operator or other people shall the operator be unprofessional.

As mentioned above, the business owner's goal is to make a profit. However, from the perspective of a self-employed person, this assumption can also be fulfilled when, for the purposes of valuing his business activity, the view of a third independent, rational person on the operated enterprise as a whole is needed. From the point of view of the freelancer, there are also a number of explanations regarding the issue of low financial consideration for renting housing units, which may not be relevant or obvious from the point of view of a third rational person. One of these explanations may be the personal relationship between the owner of the rented housing units and their tenants. This may, in the personal preferences of the landlord, cause him to decide to rent these housing units "only" at a monthly fee equal to the costs associated with their using, without any further profit. Another reason may be the rental of the housing units in order to preserve their value in the form of maintenance work, which would not be reimbursed to the tenant. In this case, it would be additional income for the self-employed, which, however, cannot be traced from the kept business documents.

Concerning the issue of unpaid wage costs for the freelancer, it is necessary to realize that self-employed persons are able to hold a position of an employee (in this case an employee of a chemist's shop), a shop manager, and a business owner at the same time. Nevertheless, such combination of all these positions is not considered by a third rational person, because their perspective is only from the position of the business owner who will logically look for employees to provide manpower for the operation of the company, and therefore the earning value of the company calculated with the wage costs for other employees.

For this reason, it is necessary to realize that the negative value of the company determined using the earning value method does not necessarily mean an error of the appraiser or illogical thinking of the self-employed. It is also necessary to realize that from the perspective of the self-employed person, these may be logically substantiated reasons, although causing zero or negative value of his business activity, and at the same time such reasons cannot be seen from the point of view of a third party.

Another comment can be made regarding the subsequent use of the asset-based valuation method to value the company. Although this procedure is stipulated by the relevant law of the Czech Republic, it is not a guarantee that the appraiser will always reach a result that will indicate the positive value of the assessed company. Albeit such assumption will apply in 99% of cases, there is one percent in which a negative valuation of the company can be achieved using the asset-based valuation method.

This may occur if the enterprise's assets consist of items that have a negative value for the enterprise. These are most often items that such a company needs to "rid of" as soon as possible, for example waste disposal, etc. Even if an enterprise engaged in such activity collects financial consideration for this activity, at the time of determining its value using the asset-based method, the value of the assets that represent the material to be disposed of may be higher than the value of mechanization, machinery and real estate with land that is needed for its disposal. For such companies, it does not mean that they do not generate any revenue for their owners and thus do not comply with the "going concern" principle.

6 Conclusion

The value of the self-employed business was determined using the earning valuation method. The resulting value was set at -742,249 CZK, that is from the perspective of a third independent rational person. Subsequently, the asset-based valuation method was used, reaching a value of CZK 1,926,070. In the ensuing discussion, different views on the negative value of the business were clarified from the view point of the self-employed owner as well as a third independent rational person. It was proven that from the perspective of the self-employed owner this may not be an unfavourable state of his business. The aim of the contribution was thus met.

The main benefit of this paper is considered to be the recommendation that follows from the analysis of the whole issue for an appraiser or a potential investor. A negative result does not necessarily mean that the business operated by a self-employed person should be terminated. In such business may be concealed values visible only to the owner, but hidden from the view of a third independent rational person.

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EARLY EXPERIENCES AS A PREDICTOR OF COPING WITH LIFE EVENTS

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Abstract: The presented study attempts to investigate to what extent the coping with life events in adulthood is affected by early experiences, parents' attitudes in approach to upbringing, and experiencing relationships in early childhood. Our study involved 699 participants (M=37.33 years). We employed the short version of the parental rearing style questionnaire (s-E.M.B.U) to analyse the early experiences, the Parental Bonding Instrument to identify parents' attitudes in approach to upbringing, the Questionnaire on attachment typology in adulthood to analyse how close relationships are experienced, and, finally, the CORE-OM questionnaire to assess the level of coping with life events in adulthood. The results suggested that the level of coping with life events is significantly affected by the characterizing experiencing anxiety in relationship and rejection from father.

Keywords: early experiences, parents' attitudes, experiencing relationships, coping with life events.

1 Introduction

The early relational experiences of an individual, the upbringing approach and practices in childhood, as well as the parent-child relationship are, besides the genetic predispositions for a child's mental development, the important determinants of an adult individual's personality traits and mental disposition (which includes also a precondition for coping with various life events). This area has attracted an extensive research, where the first studies that inspired the consequent research were conducted on psychiatric patients (Perris et al., 1980). The results indicated that a childhood deprivation was present in similar extent in all diagnostic sub-groups of affective or cycloid psychoses. According to Bleuler and Bleuler (1998), an individual's experience with close attachment figures or life experience significantly affects forming of individual's personality, which is reflected in his/her reactions in various life situations (especially in stressful conditions) and frequently also causes various psychic and psychosomatic diseases. Bowlby's attachment theory also inspired numerous different research studies in the fields of early relational experience, quality of interpersonal relations, risk and protective factors in individual personality development, and many others. An extensive research on upbringing practices in early childhood and parent-child relation reflects their importance as determinants of personality traits and dispositions for later problems (mental disorders) of an adult individual.

The relational life experience is expected to have a formative influence on neurobiological regulations (Hašto, 2005) and on establishing an individual pattern of utilized defensive mechanisms (Kaščíková, 2007). Hašto and Tavel (2015) were dealing with a relationship between mentalization (they understand mentalization simply as a complex empathy in implicit and explicit terms with a simultaneous contact with self as well as with the others) and attachment. They consider the developed mentalization ability as an important factor for resilience, and the safe attachment developed with sensitive communication behaviour as a key precondition for its further development. With this respect, they focused on the importance of attachment and mentalization in prevention of transgenerational trauma transmission. In their definition of mentalization, the authors rely on Allen et al. (2011; in Hašto and Tavel, 2015), who understand mentalization as recognizing and reflecting of own and others' mental states and adequate interpretation of behaviour.

In their study, Halama and Mazureková (2013) analysed the relationship between attachment styles and argument-solving strategies in partnerships. Their findings indicated that safe

attachment style positively correlates with constructive argument-solving strategies, such as problem-solving and cognitive restructuring. Further, they found out that insecure attachment styles are more related to unconstructive means of dealing with arguments, such as escape, problem avoidance, or looking for social support from people other than the partner. The authors of this research consider the attachment as a key factor for communication in partnership.

Based on the findings of selected research studies presented above, we might conclude that the quality of attachment, resp. an individual's early life experience, is nowadays considered as one of the core pillars of resilience and coping with life events. As for resilience, we rely on the definition by Herrman et al. (2011; in Rybárová and Konrádová, 2013), who defines resilience as individual's ability to maintain or regain mental health despite experiencing adversity. The concept of resilience according to Ungar and Liebenberg (2005; in Rybárová and Konrádová, 2013) comprises four aspects – 1. individual domain (problem-solving ability, self-efficacy, insight, empathy, goals, aspirations, ...), 2. relational domain (parenting style, social competence, meaningful relations, perception of social support, ...), 3. community domain (adequate job, violence avoidance, rituals with acceptable risk, safety, perception, access to education, ...), and 4. cultural domain (life philosophy, cultural/spiritual identification, ...). The authors of the paper dealt with the mutual relationship between resilience and type of attachment. In their results, interestingly, they found no statistically significant differences in rate of resilience depending on the type of attachment. This means that individuals with safe attachment who participated in the study did not exhibit higher rates of resilience.

Findings of several research studies indicate that rejecting a child during upbringing is a significant predictor of experiencing, coping and behaviour in adulthood. Poliaková, Mojžišová and Hašto (2007) describe this parenting approach as obviously inappropriate for creation and development of a healthy personality. Many interpersonal situation that a child is exposed to provide it with negative experience with external social environment, which leads to construction of various types of defence against this environment (with respect to the above-mentioned, we can understand these defences also as mentalization - an interpretation of an experience that influences further coping, interpretations and behaviours in new or other situations). The rejecting environment does not „allow“ the child to develop its true „self“, so it may become hostile to the external environment (in accordance with the understanding of Horney, 2000 & 2007). Hostility and anger at bad treatment are described by Horney (2007) within a vicious cycle when a child suppresses its hostile feelings due to its fear of losing love and safety, which leads to significant feeling of anxiety in the respective relation. Such feelings of anxiety in the primary relation from early childhood are „transmitted“ by an individual to his/her adult relations, which can, according to Bowlby (2010), lead to the following reactions: 1. An individual puts excessive requirements on other people and feels anxiety and anger when these requirements are not fulfilled, 2. An individual has a disability to build deep interpersonal relationships. Therefore, a rejecting parental behaviour is significantly linked to perceived anxiety in relationships.

The findings and information from the selected research studies we have presented above, as well as many other works provide an inspiration to continue researching this area. The relationships we are addressing concern the remembered parental rearing, attachment (child to parent) and bonding (parent to child), personality, and coping with life events. We focus on subjective well-being, interpersonal and social life, problems, symptoms and risk behaviour towards self and the others in connection with individual's early experience. Therefore, the aim we set for our research is to explore the relationship between early childhood experiences and coping with life events in adulthood.

2 Materials and methods

2.1 Sample

Our research sample comprised of 699 participants, out of that 509 women and 118 men (2 participants did not indicate their gender), with an average age of $M=37.33$ years (minimum 14 years, maximum 74 years) of varied socio-economic status and religion.

2.2 Methods

Jacobson, Lindström, von Knorring and Perris (1980; translated by: Poliaková, Mojžišová, Hašto, 2007). The s-E.M.B.U. is focused on retrospective assessment of perceived remembered parental upbringing behaviour, and comprises of 23 questions grouped into 3 sub-scales: Rejection (provides negative experience with external environment (focus on punishing a child, making it feel ashamed, ignoring, criticising and rejecting a child as an individual), resulting to development of various defences against the environment); Emotional warmth (a child is given a maximum acceptance in a form of unconditional love (it is characterized by tenderness, encouraging, praising, positive judgement, equal treatment), and Overprotection (excessive fear and anxiety about child's safety, excessive involvement, orders and control by making a child feel guilty). The participants answer the questions referring to their mother and father separately, on a 4-point Likert-type scale (No, never; Yes, but seldom; Yes, often; Yes, most of the time). The internal consistency of the s-E.M.B.U. questionnaire referring to mother on our sample achieved a satisfactory level for the entire questionnaire ($\alpha=0.747$) as well as for its sub-scales (rejection: $\alpha=0.799$; emotional warmth: $\alpha=0.814$; overprotection: $\alpha=0.783$). Also, the internal consistency of the s-E.M.B.U. questionnaire referring to father achieved on our sample also a satisfactory level for the whole questionnaire ($\alpha=0.725$) and for its respective sub-scales (rejection: $\alpha=0.779$; emotional warmth: $\alpha=0.832$; overprotection: $\alpha=0.756$).

Parents' attitudes in approach to upbringing as perceived during the first sixteen years of individual's life were assessed using the Parental Bonding Instrument (PBI) questionnaire, created by Parker, Tupling and Brown (1979; Czech translation: Čikošová and Preiss, 2011). The PBI questionnaire comprises of two parts (each containing 25 items referring to mother and father separately), where the participants evaluate various attitudes and behaviours of their mother and father on a 4-point Likert-type scale (very unlike, moderately unlike, moderately like, very like). Each part comprises of two scales - care and protection. The care scale contains 12 items and can be defined as tenderness, emotional warmth, empathy and proximity as opposite to emotional coldness, carelessness and rejection. A higher score means a higher level of subjectively perceived care. The protection scale contains 13 items and can be understood as control, overprotection, burden and preventing from independence as opposite to providing possibility for independence and separateness. A higher score indicates a higher level of subjectively perceived protection. The internal consistency of the questionnaire referring to father achieved satisfactory levels overall ($\alpha=0.749$) as well as for the specific scales (care: $\alpha=0.908$; protection: $\alpha=0.786$). Similarly, the questionnaire referring to mother also achieved satisfactory levels of internal consistency for the entire questionnaire ($\alpha=0.657$) as well as for its subscales (care: $\alpha=0.911$; protection: $\alpha=0.760$).

Experiencing of close relationships was analysed using the Revised Experiences in Close Relationships questionnaire (ECR-R) developed by Fraley, Waller and Brennan (2000; translation: Bieščad and Hašto). The ECR-R questionnaire comprised of 36 items divided into 2 scales: anxiety scale (defined as strong need of attention and care from the attachment figure) and avoidance scale (defined as a strong discomfort with psychic intimacy and closeness with other person). Participants indicate their level of agreement with individual items on a 7-point Likert-type scale (strongly disagree to strongly agree). The internal consistency of

the ECR-R questionnaire on our sample achieved satisfactory levels for the entire questionnaire ($\alpha=0.745$) as well as for its sub-scales (anxiety: $\alpha=0.846$; avoidance: $\alpha=0.682$).

Finally, to evaluate the level of actual psychological distress, we used a Slovak language version of the CORE-OM (Clinical Outcomes in Routine Evaluation - Outcome Measure) self-assessment scale developed by Evans et al. (2002). The instrument comprises of 34 statements on how an individual has felt during the last week, where the responses are indicated on a 5-point Likert-type scale (from not at all to most of or all of the time). The factor analysis yielded four dimensions: subjective well-being (4 items); problems/symptoms (12 items); functioning - general, interpersonal and social (12 items); and risk - risk behaviour to self and to others (6 items). Results of several studies (e.g. Elfström et al., 2013; Palmieri et al., 2009) indicate that the CORE-OM questionnaire can be also used in non-clinical population. The internal consistency of the CORE-OM questionnaire on our sample achieved satisfactory levels for the entire questionnaire ($\alpha=0.820$) and two of its sub-scales (problems/symptoms: $\alpha=0.894$; risk - risk behaviour to self and to others: $\alpha=0.808$). Another two sub-scales achieved very low levels of internal consistency (subjective well-being: $\alpha=0.450$; functioning - general, interpersonal and social: $\alpha=0.402$).

2.3 Statistical analysis

To confirm reliability of the research instruments we employed the internal consistency estimate using the Cronbach alpha coefficient. Then, to confirm presence of the determined factors we executed the factor analysis using the Varimax rotation method. Further, we used the Shapiro-Wilk test to determine the normality of our data. Following the results achieved (showing statistical significance in all tested variables) that indicate non-normal distribution of our data, we further used non-parametric tests. Pearson's correlation coefficient was calculated to identify relationships between the analysed variables. Finally, multiple linear regression was used to estimate an effect of the analysed variables on the perceived psychological distress, resp. on coping with life events.

3 Results

The data obtained from the questionnaire survey were processed using the IBM SPSS v.25.0 statistical package, where we conducted the multiple regression analysis. Before estimating the regression models, we thoroughly inspected the data to ensure that our variables are in line with all important requirements of regression analysis.

Tab. 1 Results of the regression analysis using the ENTER method

VARIABLE	B	Beta	Sig.	R Square	Sig.
Rejection from father	0.720	0.179	0.026	0.226	0.000
Rejection from mother	0.022	0.006	0.947		
Father's emotional warmth	0.412	0.124	0.216		
Mother's emotional warmth	0.305	0.088	0.345		
Overprotection by father	0.002	0.001	0.994		
Overprotection by mother	0.232	0.087	0.317		
ECRR_avoidance	0.006	0.007	0.890		
ECRR_anxiety	0.278	0.361	0.000		
PBI_care_mother	-	-	0.250		
PBI_protection_mother	0.174	0.093	0.529		
PBI_care_father	0.094	0.045	0.175		
PBI_protection_father	0.166	0.103	0.175		
PBI_protection_father	0.011	0.005	0.939		

Dependent variable: coping with life events

In the first step of our analysis we attempted to identify which variables are significantly related to coping with life events in adulthood (CORE-OM gross score). We used the ENTER method to test this assumption. The findings of the regression analysis (Tab. 1) show that the independent variables we have

tested in the model (remembered parent behaviour, parents' attitudes in approach to upbringing, experiencing close relationships) explain 22.6% of variance in coping with life events in adulthood. A closer look at the results presented in Tab 1 indicate that, among the variables inspected, there are two variables that show statistical significance, namely the rejection from father's side and experiencing anxiety in relationships.

Looking at the beta coefficients (Tab. 1), we might suggest that the anxiety experienced in relationships is the strongest factor influencing the level of coping with life events (0.361) - the higher is the level of anxiety in relationships, the more difficult becomes the coping with life events. The second relatively strongest effect was observed in case of a variable reflecting the rejection from father's side (0.179) - the highest is the rejection from father, the more difficult is the coping with life events. Further, the regression analysis suggests that the variables characterising parents' approach to upbringing play no significant role in explaining the coping with life events (their significance level exceeds the 0.050 threshold and their beta coefficient reach low values). Thus, this regression analysis suggests that coping with life events is affected mainly by early experiences representing the rejection from father and the way how we experience relationships in adulthood, mainly with respect to anxiety.

In the second step of our analysis we attempted to estimate the most appropriate regression model, thus we used the STEPWISE method. Following the Beta coefficients and statistical significance, two variables were included in the regression analysis, namely the rejection from father and anxious experiencing in relationships.

Tab. 2 Results of the regression analysis using the STEPWISE method

MODEL	R	R Square	Adjusted R Square	Change Statistics	
				R Square Change	Sig. F Change
1	0.413 ^a	0.170	0.169	0.170	0.000
2	0.445 ^b	0.198	0.195	0.027	0.000

- a. Predictors: (Constant), anxious experiencing of relationships
 b. Predictors: (Constant), anxious experiencing of relationships, rejection from father
 c. Dependent Variable: coping with life events

The variables that achieved the statistical significance in the first step of analysis were sequentially inserted to the regression analysis. Their characteristics are presented in the Tab. 2 above. First, the variable indicating the anxiety experienced in relationships, which explains the highest percentage of variance (17.0%) was inserted into the analysis. Then, we inserted the variable characterizing rejection from father. As the model 2 indicates, the R^2 increased by 2.8 percentage points to 19.8%. Despite this increase is rather moderate, the Sig. F Change shows it is statistically significant ($p=0.000$). Thus, the stepwise method helped us to estimate the best model with two variables that are the best predictors of the dependent variable - the coping with life events.

4 Discussion

The presented research focused on a question to what extent the coping with life events in adulthood is affected by early experiences, attitudes of parents in approach to upbringing, and experiencing relationships in early childhood.

Rozvadský Gugová and Kovalev (2010) emphasize that individual interpretation, perception and mentalization are more important than the actual form of the upbringing model, and they further determine his/her reactions in coping with life events. These authors further deal with relationship between coping with posttraumatic stress and individual's upbringing. They build on findings of Ruchkin et al. (1998) and Castro et al. (1999) (in: Rozvadský Gugová and Kovalev, 2010) who argue that parents' emotional warmth positively influenced the overall level of posttraumatic stress reaction, while rejection from parents had

a very negative influence. Another finding proves that rejection from parents and favouring an individual over his/her siblings has the strongest influence on development of type A behaviour. Further, the overall level of posttraumatic stress and consequent reaction exhibited negative correlation with father's emotional warmth and positive correlation with rejection from father. In their study, the authors also found out that rejection from parents seems to be a factor significantly influencing aggressiveness.

The link between attachment and parental upbringing and partnership relations were studied by Hubinská (2016), who found out, for example, significant relationships between disoriented attachment and rejection from both father and mother during upbringing, disoriented attachment and anxiety, and safe attachment and self-acceptance.

Subjective life well-being, interpersonal and social functioning and risky behaviour towards self and the others are further areas that are influenced by the early experience and that are subjects to our study. The aspects examined in our analysis are also related to findings of a research study by Hubinská (2016), who found out that rejection in upbringing negatively correlates with life satisfaction, while, on contrary, a positive correlation was proven between emotional warmth in upbringing and life satisfaction. Moreover, she also found that individuals who developed a safe attachment exhibited higher scores in items related to self-acceptance, autonomy and life satisfaction. Individuals with avoidant attachment exhibited higher score in meaning of life (this result can be considered as interesting and even surprising, and according to author's interpretation, discovering a meaning of life might partially replace the missing sensibility and safety in early childhood). Further results related to our study (in terms of interpersonal and social functioning) indicate that rejection during upbringing positively correlates with anxiety experienced in relations and avoidance in relations, with currently experienced anxiety as well as tendency to anxious behaviour.

In her research, Kopaničáková (2014) focused on influence of remembered parents' behaviour on perceived safety. Her main findings suggest that the respondents who perceived their parents' upbringing as emotionally warm tend to feel safer. The rejecting behaviour from parents was not related to risk, preventive behaviour or safety itself. As she presents, Muris (2000; in: Kopaničáková, 2014) on contrary found out that children who perceived their parents as more rejecting and anxious exhibited generally higher levels of being worried. In conclusion of her study, she summarizes that a lack of emotional warmth and rejecting behaviour in parental upbringing can be transmitted also to other social relations and can lead to distrust and avoiding other people, which in fact is one the prevention strategies from danger. Such behaviour is explained by Brisch (2011) as a social adaptation to experiences of emotional ignorance.

5 Conclusion

Our findings confirm to a high extent the findings of previous studies. In particular, the greater is the rejection from father, the more difficult it becomes to cope with life events. We explain the presented finding by the fact that in most families, the father is understood as a role model for behaviour in stressful and difficult situations, and he is the one who provides the child with an example how to cope with and manage strongly unpleasant situations. If the father has a rejecting attitude in relation to his child, the attachment that would ensure transmission of a model of behaviour in stress situations will most probably not be developed.

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THE SHARING ECONOMY DEVELOPMENT ANALYSIS IN THE CZECH REPUBLIC AND OTHER SELECTED COUNTRIES

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Abstract: Thanks to its relative novelty, the sharing economy is still an insufficiently studied concept; it has however been raising increasing awareness among population, and therefore its study is very important. During the years 2010-2020, it began to account for an increasing share of the total GDP of almost all world countries. In the sector of the sharing economy, there are companies that offer an ever-growing range of goods and services. At present, these are accommodation, transport, and multimedia services. In the Czech Republic, with the increased share of the sharing economy, an increase in the ICT sector was also recorded. There are more than 700 vehicle sharing companies operating worldwide. Relevant published data are openly available through the Czech Statistical Office (CSO) public database and companies engaged in analytical activities, and also included in annual reports for investors of particular companies (the model company). An analysis of academic and scientific publications published so far on this topic shows that this area of economics has significant potential for future research.

Keywords: sharing economy, car sharing, GDP, the ICT, scientific publications

1 Introduction

At the end of the last decade, the world's population became aware of a new type of economy, the essence of which is sharing properties, goods, and services by more consumers (users). Such type of economy is therefore called a sharing (or collaborative) economy. This term encompasses sharing goods and services in all areas where it is technically possible from the nature of particular goods or services, and this practice can be applied long-term and repeatedly.

Botsman and Rogers (2010), who published a monographic publication 'What's Mine Is Yours' concerning this type of economy, are considered to be the world's leading promoters of the whole idea.

Sharing economy has many advantages and disadvantages for all participants involved in the whole process of collaborative consumption. However, when sharing a particular asset, conditions can be created so that this asset creates value and provides benefits to all the cooperative users. Examples of goods that can be used ('consumed') repeatedly are real estates or personal and commercial motor vehicles, including individual accessories. Real estates, motor vehicles and other means of transport (bicycles, scooters, etc.) currently occupy the largest part of the sharing economy market, and it is also the part with the highest surcharges for their use. The cooperative way of using goods is also constantly expanding. Firstly, the number of people informed about such possibility of using goods is increasing, and above all, the number of consumers who use the sharing economy market is increasingly growing. This new type of economy can also be considered one of the steps in the modernization of our society. According to Kasych and Vochozka (2019), however, choosing the right model of society modernizing is crucial for the economy of each state.

The aim of this paper is to evaluate the development of the sharing economy in the Czech Republic, and to make a comparison with other selected countries. Specific data on car sharing will be used as the model case for the analysis of this development.

2 Literature review

According to Schlagwein, Schoder and Spindeldreher (2020), many authors have already dealt with the definition of the sharing economy. To clarify this concept, they selected a total of 152 different sources which had dealt with the definition of this concept. These sources are further divided into categories according to best suitability of defining this concept based on the description of the use and specific situation in which this term is most relevant to describe such economic behaviour. They also established a consolidated definition that – in their opinion – best describes this concept: The sharing economy is a peer-to-peer economy supported by an IT business model, or non-commercial sharing of unused goods or service capacity through an intermediary without a transfer of ownership.

Curtis and Lehner (2020) also dealt with the definition of sharing economy. Their main conclusion is that sharing economy can be the right direction towards sustainable consumption of our society. Businesses operating in the sharing economy have tools that can stabilize the economy of a particular state and contribute to its sustainability, which, according to Kasych, Vochozka and Yakovenko (2019), is very important in defending a competitive strategy and choosing a model of social behaviour. According to Laukkanen and Tura (2020), another advantage of this new economic direction is the value sustainability of the goods that are used cooperatively. However, they do not claim that it is thus possible to increase the sustainability of currently used business models of companies that have already decided to use this economic model to generate their own profits. According to Frenken (2017) the growing popularity of the sharing economy will require a political intervention to regulate this market. The sharing economy can be understood as an environment in which mutual exchange, access to property, and circular business models meet partially. Gabor and Lajos (2019) attribute the emergence of the sharing economy to a change in the pattern of consumer consumption behaviour. They also state that the emergence of this new economic direction will have a major impact on the capitalist economy in the future, as there is a great transformation of the model of asset ownership to the model of asset availability. Along with consumer behaviour, the emergence of this new economic direction is also attributed to the development of new digital technologies that enabled the change in consumer attitudes. According to Abdar and Yen (2019) the sharing economy environment is ideal for analysing consumer preferences. They use as an example the preferences identification of the consumers who use services known as Airbnb in the field of sharing real estate (housing units). For the users of shared properties, the most important thing when choosing a specific offer is the availability of the "food scene" around the target property. On contrary, Zhang and Chen (2019) argue that, in terms of the availability of points of interest, Airbnb users prefer different points of interest depending on the city in which the property in question is located Gutierrez et al. (2017) analysed the relationship between hotel accommodation and Airbnb accommodation in terms of tourist preferences. With the rise of Airbnb, there was a decline in the revenue of hotel facilities that are built on the outskirts of cities. Due to better accessibility of tourist attractions (historical centre, museums, etc.), the options offered by Airbnb are increasingly preferred among tourists. Blal, Singal and Templin (2018) examined the effects of the Airbnb boom on hotel facility turnover. They state that the development and pricing of the use of Airbnb has a major impact on the development of the turnover of hotel facilities. According to Amaro, Andreu and Huang (2019), Airbnb is more lucrative for millennials than for older customers. Airbnb enables the millennials to gain unique accommodation along with the economic benefits they can enjoy at a relatively young age. Even from this point of view, according to Horák and Krulický (2019), real estate sharing can be considered an investment asset. According to Wen and Siqin (2020), although the sharing economy is a means of acquiring

goods and using them at a very low cost, users may in some cases be deterred from using it due to high uncertainty of the quality of the cooperative goods. Therefore, they focused on establishing the price for the provision of these goods which would correspond with the quality of the goods. According to their findings, the users of such goods prefer the price at which they will be able to use the property regardless of its quality or degree of modernization. Therefore, they do not recommend companies operating in this economy sector to invest excessive amounts of money in modernization or quality of the properties offered this way. In contrast, according to Ludbrook et al. (2019) in industry 4.0, investments in the company modernization are essential, but they are mainly investments in the production sectors that are not yet used by the sharing economy.

Kong et al. (2020) found that "verbal expression of positive evaluation of cooperatively used goods" is the most important factor for those interested in temporarily acquiring the goods when deciding and orienting themselves in a large amount of offers. Since supply and demand in the sharing economy take place primarily through online communication and offers, by these verbal expressions are meant the users reactions through web portals.

Another expanding asset that is increasingly used in the sharing economy is bike sharing. It is one of the ways to rather effectively address the mobility of people, especially in cities where special lanes, paths, etc. are reserved for these vehicles. The first bicycle used for bike sharing was served this purpose as early as 1965 (the first motorcycle was operated for this purpose in 1968). However, this idea arose primarily for stabilization of the traffic situation in cities with a large population, and the economic profit from the operation of this service was not the priority (Ploeger and Oldenzel, 2020).

However, the demand for this service has changed greatly since its beginning. Sohrabi et al. (2020) therefore created a model which, in bike sharing operated by the provider through docking stations, can predict the occupancy of individual docking stations and bicycles currently in use in real time. This system takes into account days of the week, times of the day, weather and infrastructure, and can be used to optimize the income of the operators of such service.

Chen et al. (2020) created a pricing model for establishing optimal prices for the use of bike sharing for the operators of this service. This model takes into account as the main price-creating factor the degree of comfort that users derive from the use of this service. A positive factor that can allow the operator to increase prices is the carefree operation of the bicycle for the customer. On the other hand, the loss of comfort and privacy for a customer who has not yet used any of the means of public transport is considered a negative factor.

Zhou, Wang and Li (2019) compared the use of taxi services and bike sharing. In the summer months, according to their conclusions, the user prefers bike sharing. The only significant role that would discourage users from using bike sharing during this period is the distance from the destination.

The last rapidly growing market in the sharing economy sector is car sharing. The world's best-known company providing this service is Uber, which currently operates in more than 700 cities around the world. Nonetheless, in Budapest the car sharing service operated by Uber was regulated since 2007, and in the end it was completely banned. This had an impact on the bike sharing market, as Bako et al. (2020) found that users of car sharing services also use bike sharing services. With the ban on car sharing, the demand for bike sharing on working days also fell by 6.5%. On the contrary, the demand for bike sharing increased by 23% at weekends. It also follows that the income of car sharing and bike sharing operators depend on the number of regular users of these services, and the occasional user will not increase their income.

According to Hahn et al. (2020) car sharing in the beginnings of the sharing economy failed to take place in all initially operated areas. Based on this fact, individual factors were determined that would encourage or discourage the car sharing users to use this service. The most important factor that is in favour of the use of the car sharing service is the lifestyle of the user, and the possibility to pick up the car anywhere and then leave it at any place at any time of the day. Another positive factor for the users is free parking of the vehicle anywhere in the cities. On the other hand, the content of the vehicle fleet of the operating company has no effect on the outcome of the user's decision to use this service. However, choosing an older or lower quality vehicle fleet can be a fatal mistake for the service operator.

Mugion et al. (2019) one of the reasons for the preference of car sharing is the environment-friendly attitude of the users. Boysen, Briskorn and Schwerdfeger (2019) state that car sharing also shares parking spaces in cities, thus reducing their need.

Pietro et al. (2019) focused on identifying the target users who use the car sharing service most often, and on whom the operators should focus when promoting their company. The most common users of car sharing are the younger generation of males who live in cities. Urban demography can therefore be a valuable tool for the operators who can use this information to increase their income.

Sun et al. (2019) established optimal prices for car sharing use. The primary factor that affects the total price for using this service is the distance travelled by the rented car. Furthermore, the user may be charged an extra fee for using the car during the rush hour, as this extends the waiting time of another person for this particular car. This fee reduces the lost profit of the operator shall the waiting client eventually choose another mean of transport, and the vehicle will thus be no longer used upon arrival. This is the same principle as the fee for a waiting taxi driver.

Jin, An and Yao (2020) analysed the possibilities of replacing internal combustion engine vehicles with electric vehicles. With the development of the battery capacity and lifespan, this trend has already been monitored at many car sharing operators. The disadvantage of this system is that if a person potentially interested in using this service sees that the range of an electric car is low due to the charge of its batteries, they will not decide to use this vehicle even if the range should be sufficient to arrive at their destination.

Along with electric vehicles, vehicles with autonomous control systems can be expected to be added to car sharing fleets in the future. Zhou et al. (2020) have therefore already developed, on the basis of current knowledge, a model of preferences of the users who would rather use this service than vehicles without an autonomous system. Although the user group preferring autonomous vehicles might be expected to be that of users with a low level of driving experience, women, and pensioners, the opposite is true. These groups are in fact also among the groups of users who, according to surveys, trust autonomous vehicles the least because of safety concerns.

3 Materials and methods

First, general data on the development of gross domestic product (GDP) in the Czech Republic will be obtained. Further, the information on the share of the sharing economy in GDP will also be sought. Subsequently, all values found will be specified from the point of view of providing car sharing services.

As the efficient operation of the motor vehicle sharing service is possible mainly through information and communication technologies (ICT), data on the development of this sector in the Czech Republic will be sought.

Materials for analysis will be found using publicly available reports from companies that analyse the Czech market. As efforts will be made to summarize and analyse the latest data (for

the years 2012-2019), other non-academic sources will also be used. Above all will be used the data from the web portal of the Czech Statistical Office (CSO).

Global data on the sharing economy will be also searched for and presented for comparison. These results will be subsequently discussed based on the analysis of the development trend of the sharing economy. Simultaneously, the impact of car sharing on the prices of motor vehicle will be assessed. As a model case, the globally operating company Uber will be selected. It is a provider of car sharing as well as other services (food delivery – Uber Eats, freight transport, and others).

Finally, an analysis of the number of scientific publications that have also addressed this issue will be carried out, together with any possible comments. The Web of Science database will be used for this analysis.

4 Results and discussion

First, an analysis of the GDP development in the Czech Republic was performed. The development of GDP is shown in Table No 1.

Tab. 1: Development of the GDP of the Czech Republic determined by the production method (current prices) for the period 2012-2019 (in millions of CZK)

Year	2012	2013	2014	2015
GDP	4,059,912	4,098,128	4,313,789	4,595,783
Year	2016	2017	2018	2019
GDP	4,767,990	5,047,267	5,323,556	5,652,553

Source: CSO (2020a).

According to Table No. 1, it is evident that the GDP of the Czech Republic is increasing every year. This increase also provides space for development of all types of economies. It also concerns the sharing economy. According to Mareček and Machová (2017), the amount of GDP of a specific state can be used to identify the correlation with the state debt of a particular country.

In 2014, the share of the sharing economy in the Czech Republic total GDP was set at 0.02% with the help of the bottom-up method (0.04% with the help of the top-down method). At the same time, the potential share of the sharing economy in the GDP of the Czech Republic was determined by the bottom-up method to 0.51% – the top-down method 1.19% (Deloitte, 2020).

In comparison with the Czech Republic, the sharing economy in other EU member states has a similar share in the GDP of a particular state. Table No. 2 shows the shares of the sharing economy in GDP by the bottom-up method and the top-down method, together with its potential share in selected EU countries.

Tab. 2: The share of the sharing economy in the GDP of selected EU countries

State	Share of the sharing economy (bottom-up)	Share of the sharing economy (top-down)	Potential share of the sharing economy (bottom-up)	Potential share of the sharing economy (top-down)
Germany*	0.02%	0.03%	0.70%	1.10%
Spain*	0.06%	0.15%	0.90%	2.30%
France	0.04%	0.09%	0.80%	1.60%
Italy*	0.02%	0.05%	1.20%	2.50%
Netherlands	0.06%	0.15%	0.70%	1.90%
Austria	0.01%	0.02%	0.60%	1.20%
Poland*	0.03%	0.05%	0.60%	1.20%
Romania*	0.01%	0.02%	0.50%	1.30%
Great Britain	0.09%	0.19%	1.00%	1.90%

Source: Deloitte (2020).

*data for the year 2014

According to Table No. 2, it is evident that in selected EU countries the share of the sharing economy in the GDP of a

particular state is as low as in the Czech Republic. Italy has the highest potential share of the sharing economy in its GDP (2.5%).

The development of the sharing economy is significantly conditioned by the development of information and communication technologies (ICT). Platforms developed in this sector serve in the sharing economy for marketing, payment, communication, and localization purposes of the goods shared. At present, the expected growth of the sharing economy is not the only reason for employing more and more ICT professionals. Table No. 3 shows the numbers of natural persons employed in the ICT sector together with the share in total employment in the Czech Republic.

Tab. 3: Employment in the ICT sector in the Czech Republic in the years 2015-2018

Year	Number of natural persons employed in the ICT (in thousands)	Share of ICT in total employment (in %)
2015	147,7	2.8
2016	157,7	3.0
2017	164,2	3.1
2018	169,2	3.1

Source: CSO (2020b).

Table No. 3 shows that the number of natural persons working in the ICT sector in the Czech Republic increased by 21,500 in the years 2015-2018. The total share of all workers in the ICT also increased (by 0.3%). It can therefore be concluded that the conditions needed by the sharing economy for its functioning and development may continue to create jobs in the ICT sector in the future. According to Neary et al. (2018), the development of the ICT sector is very important, for example, in terms of research into the use of artificial intelligence in business practice.

One of the areas where the sharing economy already operates is car sharing. This service was launched in the Czech Republic in 2012. Since then, several operators of such services have entered the Czech market. With the growing demand for car sharing, the total number of passenger cars and commercial vehicles operated for the purpose of sharing is also increasing. They are used by various users and owned by particular companies providing these services. Table No. 4 shows the development of the number of motor vehicles (passenger and commercial vehicles) that are operated in the Czech Republic in the form of car sharing.

Tab. 4: Number of motor vehicles operated for car sharing in the Czech Republic in the years 2012-2019

Year	Number of motor vehicles
2012	9
2013	16
2014	32
2015	90
2016	213
2017	344
2018	490
2019	760

Source: Czech Carsharing Association (2020).

According to Table No. 4, it is clear that the increase in the number of motor vehicles operated for car sharing in the Czech Republic began to increase significantly in 2015. Since then, the number of motor vehicles operated for car sharing has been rapidly increasing. This trend also applies worldwide. Along with the number of motor vehicles on offer, the number of the users of such services is also increasing worldwide. Table No. 5 shows the worldwide development of the number of car sharing and taxi services users.

Tab. No. 5: Worldwide number of users of car sharing and taxi services (development from the years 2017-2024) (in millions of users)

Year	Number of users (in millions)
2017	1,356,4
2018	1,378,0
2019	1,405,3
2020	1,437,9
2021	1,474,4
2022	1,512,9
2023	1,551,5
2024	1,588,2

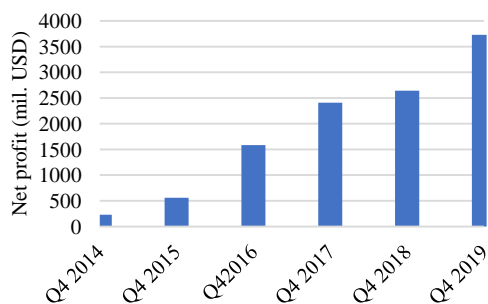
Source: Statista.com (2020).

According to Table No. 5, it is evident that the number of car sharing users will continue to increase, according to the past as well as the current development trend. This is also one of the reasons why the share of the sharing economy in the total GDP of a particular state can be expected to increase. The operation of taxi services may therefore be partially reduced, as a decrease in demand for this service can be expected.

Car sharing can also be expected to have an impact on the number of individually owned motor vehicles in the future. According to Deloitte (2020), there were six car sharing operators in 2017, and since then their number has increased slightly. Fishman, Washington and Haworth (2014) found out that bike sharing became widespread throughout Europe, North America, and China between the years 2004 and 2014. In London, for instance, the rate of substitution of motor vehicles by bicycles increased from 2% to 10% during this period. On a global scale, this value could be considered as the ultimate value of optimizing the use of motor vehicles in order to reduce the burden on the environment.

The growth of the potential of the sharing economy can also be presented on the financial data of the global company Uber, as it is one of the largest companies operating in the field of the sharing economy. Figure No. 1 shows the development of Uber's net income for the period of 2014-2019.

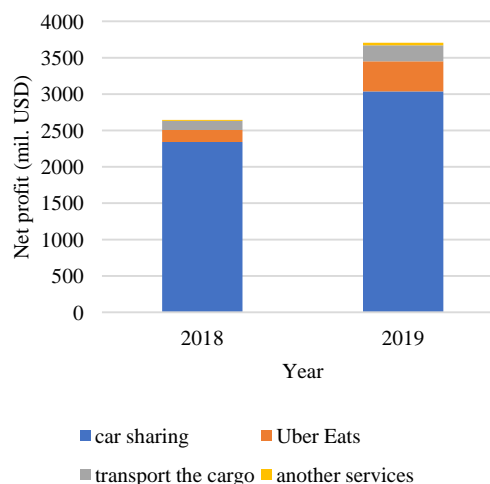
Figure 1: Development of Uber's net revenue in the period of 2014-2019 (in millions USD)



Source: Investing.com (2016), Carsurance.net (2019), Uber investor (2020), own processing.

Based on Figure No. 1, it is clear that the net income of the model company Uber are rising very fast. In 2014, its net profit was \$228,000,000, and in 2019 it was \$3,730,000,000. However, Uber's revenue consists of all its services. Figure No. 2 shows the share of individual operated services in the amount of its net profit.

Figure 2: Share of operated services of Uber in the total net revenue (2018-2019)



Source: Uber investor (2020), own processing.

According to Figure 2, it is clear that for the model company, its main share is the net generated profit from the operation of car sharing services.

At this point, it is also necessary to emphasize the difference between the car sharing service and the service operated by the above-mentioned Uber. In the case of car sharing, this service provides a vehicle that can be used for a fee to meet the transport needs of co-consumers to a location of any distance. However, in the case of services provided by Uber, the motor vehicle is provided for the same purpose, but a part of its lease is also the time of a particular driver who, under the auspices of Uber, acts as the driver of the motor vehicle (shared commodity). It is therefore a cooperative use of a vehicle vs. cooperative use of a vehicle with a driver.

Another very significant difference between car sharing companies and services provided by Uber is the question of ownership of a cooperatively used property. Uber does not own the motor vehicles it offers for rent, but their owners are drivers who offer their private motor vehicles for the cooperative use. On contrary, car sharing companies own and operate all the vehicles on offer.

It is also important to note that Uber's services are usually provided in the mornings and afternoons. This is because the drivers who provide their motor vehicles for cooperative use are generally able to do this activity before and after their own employment, which forms the main part of their income, and the work for of Uber services is usually a source of secondary income. In the case of car sharing, it is possible to operate such service 24 hours a day, as the offered vehicles are rented without the need for the presence of another person (driver), and their management is usually digital (electronic vehicle reservation).

Car sharing has a significant impact on the development of prices of selected groups of motor vehicles (new and used). The very idea of car sharing is supported by reducing the number of passively used motor vehicles and increasing the share of actively used motor vehicles. If car sharing becomes even more popular in the future, which can be assumed based on the results from historical data, it is also possible to assume a decline in demand for selected groups of motor vehicles, especially by natural persons. This may lead to motor vehicle dealers being forced to reduce the prices of selected groups of the motor vehicle range on offer. The most risky groups of motor vehicles, for which a drop in demand can be expected, will be sports motor vehicles, the operation of which is the most expensive in terms of the type of fuel and maintenance. On the other hand, we can expect an increase in demand for motor vehicles that have long-lasting propulsion units and are also powered by alternative

fuels, such as LPG and CNG, which are also more affordable than conventional fossil fuels. Although it is necessary to regularly service motor vehicles equipped with alternative fuels, their utility for car sharing companies is much bigger than that of motor vehicles with fossil fuels. Nevertheless, it cannot be expected that, as a result of the sharing economy development, the only customers of motor vehicle dealers will be car-sharing service operators.

Another effect of car sharing on motor vehicle prices can be observed in the valuation of the company's assets. From the viewpoint of valuing the company's assets, it can be assumed that companies whose assets consist mainly of motor vehicles (transport companies) will be more prone to loss of the value of their own assets. In contrast, companies that are not primarily engaged in transportation activities will not be exposed to the risk of a decrease in the value of assets to such an extent.

From the point of view of the number of scientific publications dealing with the sharing economy, a total of 19,081 articles were found after entering the key phrase "sharing economy". After applying a filter from the field of economics, 5,762 contributions corresponded to this selection. In terms of time, there has been an increase in publications on this topic since 2014. Since 2017, 500 articles on this topic have been published annually. However, after entering the advanced keyword "car", only 58 articles were found since 1998, the vast majority of which was published in the years 2017-2019 (a total of 31 articles). Only six articles out of 31 are focused on car sharing. The remaining 25 contributions were more concerned with the use of electric vehicles.

5 Conclusion

The sharing economy has become a recent phenomenon, and its popularity is growing, as is the amount of turnover that is recorded by companies operating in this part of the market.

Based on the results, it is evident that in the Czech Republic, as well as in other countries, the full potential of the sharing economy – given current technological conditions – has not yet been fulfilled. Therefore it can be expected that the share of the sharing economy in the GDP of each state will increase in the future. In the field of car sharing, this service is currently operated in more than 700 cities around the world (Uber). In the Czech Republic, the operating companies increased the number of motor vehicles provided for car sharing from nine motor vehicles to 760 motor vehicles (2019). The number of users of these services around the world is also growing.

The net income of the model company Uber are growing at a very fast pace. Despite providing several types of services, the company generates the largest share of its net profit through car sharing.

In the future, we can also expect a decrease in the prices of new and used motor vehicles of selected groups (sports motor vehicles, vehicles with higher operating costs) due to a decline in demand. This is also related to the assumption of an increase in demand for alternative fuel vehicles (LPG, CNG) with a longer service life of the power units and low operating and service costs.

In the field of scientific and academic publishing activities, a significant increase in the number of published articles on the topic of the sharing economy has been recorded since 2014. However, the issue of car sharing has so far been relevantly addressed by only 31 contributions. By analysing all available data, the goal of this paper was met.

Based on the number of publications on the topic of car sharing, and the demonstrable development of the sharing economy, there is a new, so far insufficiently researched area opening up for academic and publishing activities; an area which shall require increasing attention from the general public in all countries.

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Primary Paper Section: A

Secondary Paper Section: AH

RESEARCH INTO MOTION PERFORMANCE CHANGES OF PRIMARY SCHOOL CHILDREN OVER A PERIOD OF 20 YEARS

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This research was implemented within the VEGA 1/0122/19 project *Somatic and motor characteristics of primary school children and their development trends with special emphasis on handicapped Romany communities.*

Abstract: This research tested 950 primary school pupils in the age from 7 to 10 years. All of them attended primary schools in East Slovakia at the time of testing. We employed the Eurofit test and compared our results to those provided in Turek (1999). The Eurofit test was used for the sake of compatibility with Turek's research. Based on the measured and computed data we identify the trend in motion performance and somatic parameters. The data collected in 2019 is evaluated by standard statistical methods. It is compared to Turek's (1999) data by means of the parametric one sample t-test. The results indicate worse motion performance in primary school pupils compared to the 1999 measurements.

Keywords: somatic parameters, motion performance, Eurofit test, t-test

Introduction

The Act of Sports, No.440/2018, introduced in the Slovak Republic an obligatory nationwide testing of motion performance of pupils attending the 1st and the 3rd years of primary school. Despite numerous problems, which accompanied the testing process (material problems, personnel, etc.), the test results will no doubt become a valuable source of information of motor predispositions of children and will contribute to a higher effectiveness of the selection of talented children for sports. A Commission of the Ministry of Education, Science, Research and Sports specified the following motor and somatic tests: body height and weight, BMI - body mass index, repeated composition with a club, pull-up upper-catch endurance, standing long jump, shuttle run 4x10 m., sit-and-reach, rolling three balls, and multistage endurance run. Apart from the somatic parameters of the body height, body weight and BMI, the tests include a battery of nine test items six of which are a part of the Eurofit test. The first stage of the nationwide testing process included children attending the first year of primary school. The present research encompasses 7-10-year-old pupils tested for somatic parameters and motor performance by means of the Eurofit test battery. The results are compared to those presented in Turek (1999).

1 Problem

The motion performance testing in Slovakia and former Czechoslovakia has a long tradition. The first nationwide testing was implemented by Pávek (1966). New test batteries, which were focused on the evaluation of physical abilities and performance of pupils were introduced in the countries of West Europe and North America in 1950s and 1960s. The Committee for Sport Development of the European Council formulated fundamental principles for mapping physical development and motion performance in children and youth in the EUROFIT monograph (1987) which summarized empirical results and defined testing methods.

The Eurofit motion performance measurements also included somatometry, i.e., measurements of the body height and weight, subcutaneous tissue measurements for the determination of the fat percentage, and specification of the BMI – the body mass index.

Pávek (1966) was one of the first to examine and measure the motion performance in the former Czechoslovakia. A large-scale project examining physical abilities and motion performance was implemented by Moravec et al. (1987). Moravec and his team repeated their measurements in 1996. Motion performance tests

were later implemented by Moravec (2002), Zapletalová (2002), Turek (1999), Glesk and Merica (2000), Horváth (2001), Čillík (2016), Šimonek (2018) and others. Somatic parameters and motion performance in Romany children were tested by Horváth (2001) and Horváth, Bernasovská, Boržiková and Sovičová (2010). A research team of the Department of Physical Education and Sports, Constantine the Philosopher University in Nitra collected data from 169 pupils attending the first year of primary schools in Nitra, and compared it to the test data in Moravec (2002), Zapletalová (2002) and Čillík (2016) within a pre-research stage of the nationwide program of motion performance testing. The results were confirmed by the 2019 nationwide testing itself published in Ružbarský and Perič (2019). Recent approaches prefer to focus on basic motion competencies of pupils of individual age categories instead of diagnosing the motion performance. The new test batteries MOBAK1-2, MOBAK 3-4 and MOBAK 5-6 motivate pupils of the 1st to 6th years of primary school to master natural motion activities.

2 Method

2.1 Data collection method

The research data was collected at primary schools of East Slovakia. We tested 950 children, including 465 boys and 485 girls. We measured somatic parameters in 7- to 10-year-old children and tested them for eight items of the modified Eurofit test.

TH	Body weight	
TV	Body height	
BMI	Body mass index	
TR	Flamingo balance test	Factor: Static balance
TAPP	Plate tapping	Factor: Frequency speed
PRKL	Sit and reach	Factor: Body flexibility
SKOK	Standing long jump	Factor: Dynamic strength of legs
LS	Sit - ups	Factor: Dynamic and endurance strength of abdominal and loins-thigh muscles
VZH	Push –up test	Factor: Static and endurance strength of arms
CBEH	Shuttle run 10x5m	Factor: Running velocity with direction changes
VBEH	Multistage shuttle run endurance	Factor: Running endurance

Our data was compared to those in Turek (1999). The latter provides data on 3,590 children, including 1,855 boys and 1,735 girls living in East Slovakia.

2.2 Research hypotheses

H0-1 We hypothesize no statistically significant differences in somatic parameters between the results in Turek (1999) and the 2019 research.

H1-1 We hypothesize statistically significant differences in somatic parameters between the results in Turek (1999) and the 2019 research.

H0-2 We hypothesize no statistically significant differences in individual motion performance test items between the results in Turek (1999) and the 2019 research.

H1-2 We hypothesize no statistically significant differences in individual motion performance test items between the results in Turek (1999) and the 2019 research; in addition, we hypothesize that the results in Turek (1999) will be better than those in our 2019 research.

2.3 Data processing

Hypotheses H0-1 and H0-2 were verified by means of Student's one sample t-test. The correct use of this test required verification of the set normality by means of Shapiro wilk test. Since the set normality was confirmed by this test the hypotheses could be verified by the parametric Student's one sample test.

$$t = \frac{(x_{1999} - x_{2019})}{s} \sqrt{n}$$

where

x_{1999} – arithmetic mean of the values in Turek (1999)

x_{2019} – arithmetic mean of the values in our 2019 research

s – standard deviation in 2019

n – number of testees in 2019

The calculated value t was compared at the postulated significance level of $\alpha = 0,05$ to the table value of Student's distribution at n-1 degrees of freedom t_{krit} .

If $t > t_{krit}$ the null hypothesis H0 is rejected and the alternative hypothesis H1 is accepted.

3 Results and discussion

The results of Student's t-test are given in Tables 1 and 2. Student's t-test was used to identify possible, statistically significant differences between Turek (1999) and our 2019 results in individual test items. The t-test results are commented together with the diagrams.

Table 1: T-test results - boys

$\alpha=0,05$	7-year-old boys	8-year-old boys	9-year-old boys	10-year-old boys
	n=105	n=130	n=112	n=118
	tkrit=2,020	tkrit=1,978	tkrit=1,981	tkrit=1,980
TV	0,937	0,89	3,22**	2,68**
TH	2,54**	1,74	2,39**	5,37**
BMI	3,02**	2,48**	1,25	3,36**
TR	9,96**	1,31	5,22**	2,27**
TAP	12,74**	5,63**	6,22**	2,12**
PRKL	9,15**	13,35**	11,95**	10,98**
SKOK	3,1**	6,26**	3,01**	9,5**
LS	0,95**	0,94	1,84	5,22**
VZH	6,17**	3,24**	0,138	3,23**
CBEH	5,67**	0,35	0,151	2,09**
VBEH	2,02**	1,35	0,89	1,66

α - statistical significance

n – number of probands

** statistically significant difference at the significance level of $\alpha=0,05$

Table 2 : t-test results - girls

$\alpha=0,05$	7-year-old girls	8-year-old girls	9-year-old girls	10-year-old girls
	n=115	n=123	n=123	n=124
	tkrit=1,980	tkrit=1,980	tkrit=1,980	tkrit=1,980
TV	2,01**	4,66**	1,35	2,78**
TH	0,62	0,25	2,97**	5,06**
BMI	0,125	1,7	3,09**	4,08**
TR	14,48**	5,84**	4,25**	4,47**
TAP	7,52**	3,92**	5,24**	3,58**
PRKL	13,39**	10,75**	11,85**	11,53**
SKOK	4,01**	4,54**	4,86**	8,62**
LS	2,2**	0,76	0,04	5,81**
VZH	4,66**	0,17	1,71	0,39
CBEH	3,65**	2,59**	0,67	2,25**
VBEH	4,03**	0,7	0,7	1,08

α - statistical significance

n – number of testees

** statistically significant difference at the significance level of $\alpha=0,05$

3.1 Somatic parameters

3.1.1 TV – Body height

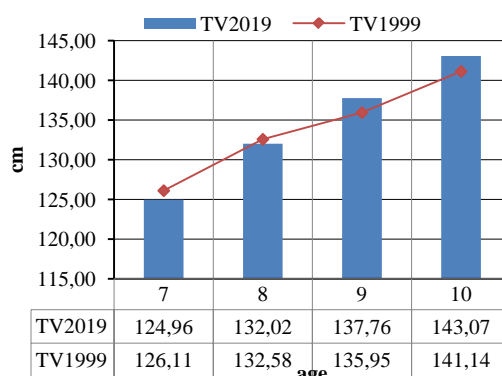


Diagram 1: Body height comparison - TV - boys

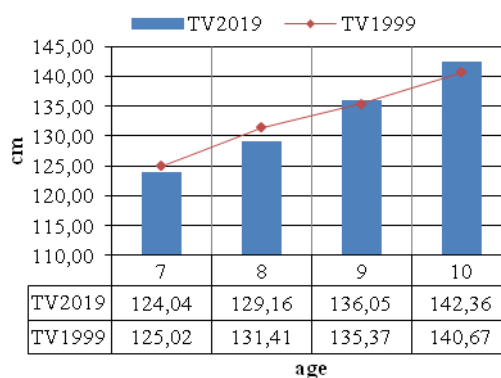


Diagram 2: Body height comparison - TV - girls

Our analysis of the t-test and the diagrams show that the 2019 male testees are taller in a statistically significant way only in the age categories of 9- and 10-year-old pupils. The girls from Turek (1999) are even taller in a statistically significant way in the age categories of 7- and 8-year-old pupils. While girls in the age of 9 show minimum differences, the 10-year-old girls from our 2019 research are taller in a statistically significant way.

3.1.2 TH –body weight

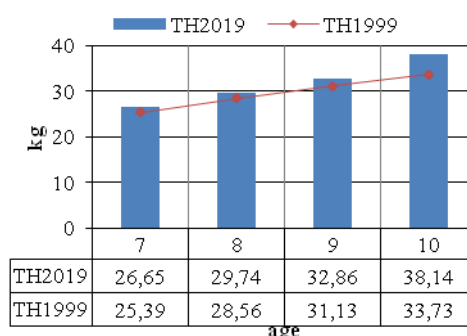


Diagram 3: Comparison of the body weight –TH - boys

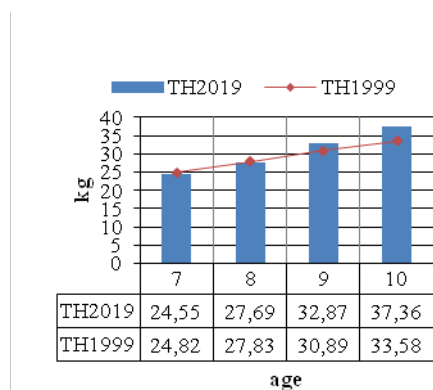


Diagram 4: Comparison of the body weight –TH - girls

It follows from Table 2 that the body weight is higher in our research in a statistically significant way only in 7-, 9- and 10-year-old boys. Statistically significant differences were also found in 9- and 10-year-old girls. The differences increase with the age in both boys and girls. The difference in average values in 10-year-old boys is 4.41kg, which is 13.01%; in 10-year-old girls it is 3.78kg, i.e., 10.01%.

3.1.3 BMI - Body mass index

The body mass index is a calculated value which gives relevant information about the proportion between the weight and the height. It enables us to identify a too low or a too high weight, or even obesity. In children, it is evaluated differently from adults - cf. Diagram 7.

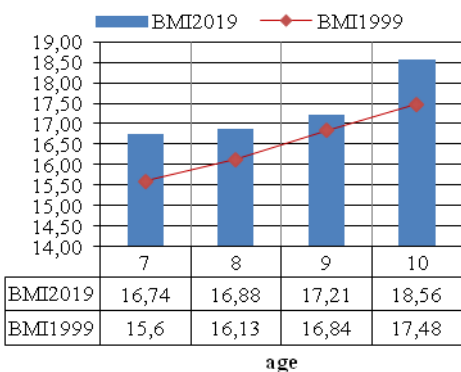


Diagram 5: Comparison of the body mass index - BMI - boys

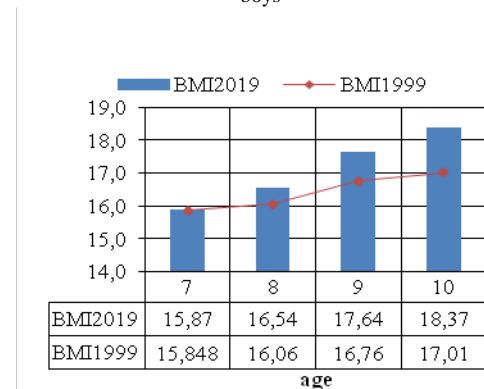


Diagram 6: Comparison of the body mass index – BMI - girls

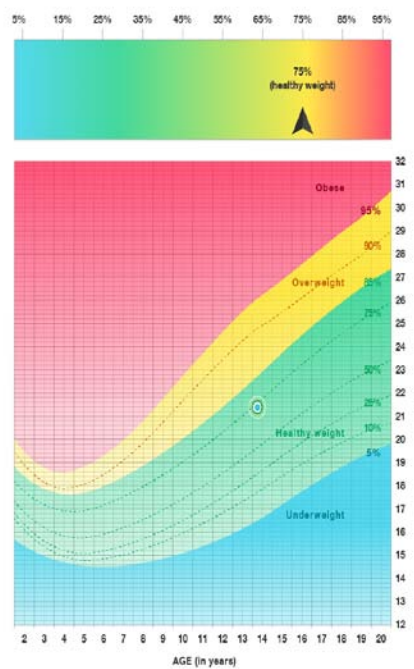


Diagram 7: Illustration of the BMI by age
Source: <https://bmiccalculatorusa.com>

Diagram 7 provides us with the BMI values for children of a specific age. The differences between the values obtained in 1999 by Turek and our values increase with the growing age of both boys and girls. The differences in 9- and 10-year-old children are statistically significant at the significance level of $\alpha=0,05$

With regard to hypothesis H0-1, the evaluation is ambiguous for all age categories. There are no statistically significant differences between the 1999 and the 2019 data in terms of somatic parameters, in particular, the body height of 7- and 8-year-old boys and 9-year-old girls. The alternative hypothesis H1-1 applies to the categories of 9- and 10-year-old boys and 9-year-old girls. This means that there are significant differences in the values obtained in the two research projects in the body height of these age categories. The 2019 children are taller than the 1999 children. As far as the body weight is concerned, hypothesis H0-1 has been confirmed in 8-year-old boys and 7- and 8-year old girls. It is only in these age categories that there are no significant differences between the 1999 and the 2019 children in terms of physical weight. The other age categories of boys and girls manifest statistically significant differences between the two sets of research data in the somatic parameters of body height and body weight. The body weight of the 2019 children is higher than that of the 1999 children.

3.2 Motion performance

3.2.1 TR -Balance test - factor: static balance

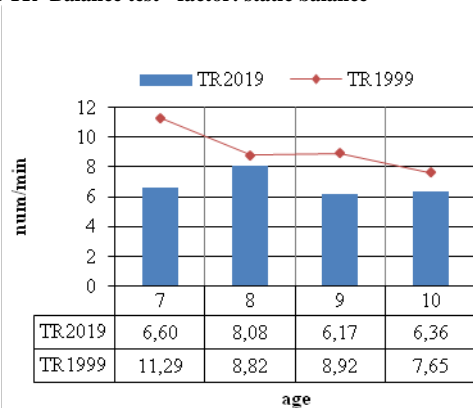


Diagram 8: Comparison based on the balance test – TR - boys

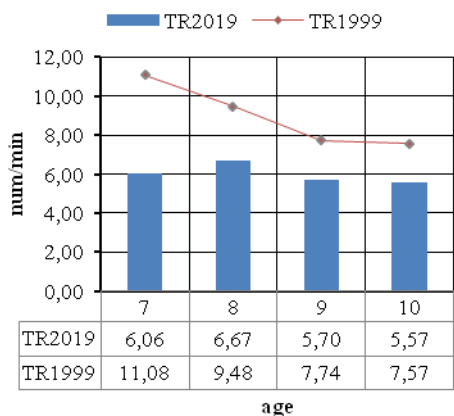


Diagram 9: Comparison based on the balance test – TR – girls

The balance test is designed to evaluate static balance. The t-test results confirm a statistically significant difference between the data from 1999 and 2019 in all age categories, with the exception of 9-year-old boys. Nevertheless, the 2019 results in this age category are still better, even though this fact is not confirmed by the t-test. Contrary to our expectations, the 2019 results are better than those obtained in 1999.

3.2.2 TAP - Plate tapping - factor: frequency speed of arm

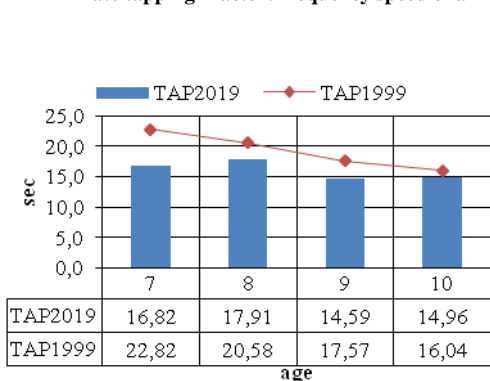


Diagram 10: Comparison based on plate tapping – TAP- boys

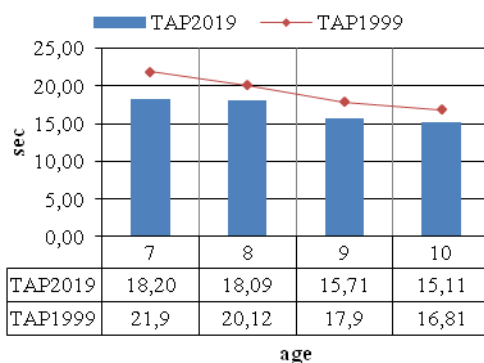


Diagram 11: Comparison based on plate tapping – TAP- girls

This test is designed to evaluate the arm frequency speed. The t-test results suggest that the differences between the 1999 and the 2019 data are statistically significant in all age categories of boys and girls; in particular, the 2019 results are better than the 1999 results. This gives support to hypothesis H1-2 postulating significant differences between the two sets of data. However, in contrast to our expectations, better results were achieved by children in the 2019 tests.

3.2.3 PRKL - Sit-and-reach –factor: body flexibility

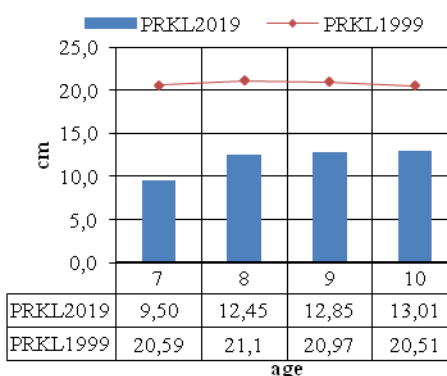


Diagram 12: Comparison based on sit-and-reach – PRKL- boys

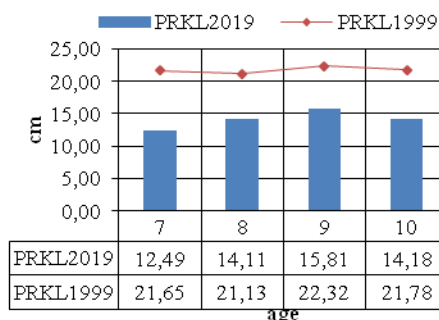


Diagram 13: Comparison based on sit-and-reach – PRKL- girls

This test item is designed to evaluate body flexibility. It provides unambiguous t-test results. This test confirms statistically significant differences between the 1999 and the 2019 data in all age categories of boys and girls. Body flexibility is much better in the 1999 population than in the 2019 children. This is manifested in diagrams 12 and 13. The biggest differences have been found in 7-year-old boys and 9-year-old girls. This gives support to hypothesis H1-2 saying that there are statistically

significant differences between the 1999 and the 2019 testees. In particular, the 1999 children show better results in this test item.

3.2.4 SKOK - Standing long jump – factor: dynamic strength of legs

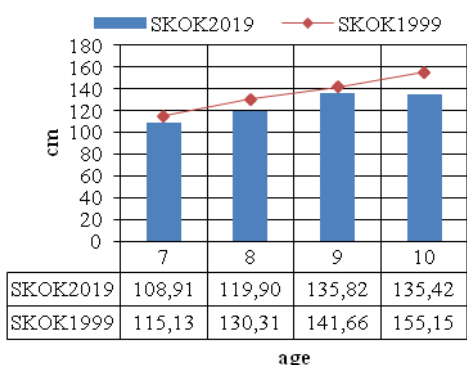


Diagram 14: Comparison based on the standing long jump – SKOK - boys

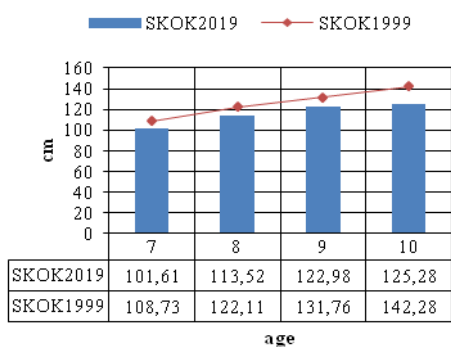


Diagram 15: Comparison based on the standing long jump – SKOK - girls

This test item which makes it possible to evaluate the dynamic strength of legs opposes hypothesis H0-2 for all age groups of boys and girls, and confirms the alternative hypothesis H1-2. This means that there are statistically significant differences between the 1999 and the 2019 results. As it follows from diagrams 14 and 15, the 1999 data is much better than that obtained in 2019. The most striking differences have been identified for the age category of 10-year-old boys with the difference being as high as 13%, and the age category of 10-year-old girls with the difference at the level of 8.4%.

3.2.5 LS - Sit-ups – factor: dynamic and endurance strength of abdominal and loins-thigh muscles

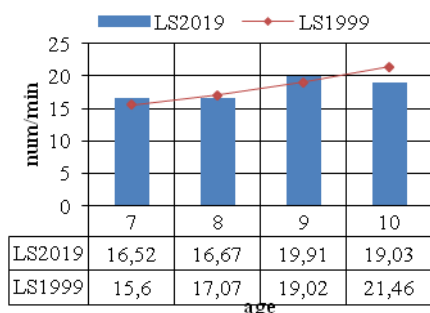


Diagram 16: Comparison based on sit-ups - LS- boys

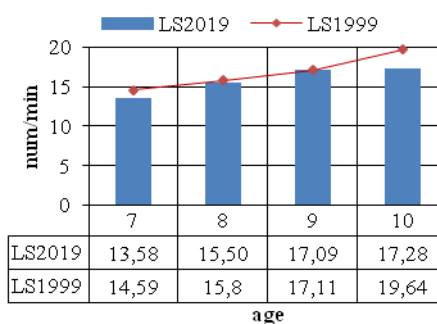


Diagram17: Comparison based on sit-ups - LS- girls

The sit-up item tests the dynamic and endurance strength of abdominal and loins-thigh muscles. The results are rather ambiguous. A statistically significant difference between the two data sets has been confirmed only for 10-year-old boys (in favour of the 1999 testees). In the group of 7-year-old boys, the data is better for the 2019 testees in a statistically significant way. No statistically significant differences have been identified for the groups of 8- and 9-year-old boys. Statistically significant differences in favour of the 1999 testees have been found for 7- and 10-year-old girls. The groups of 8- and 9-year-old girls do not show any statistically significant differences. In general, the results of the 1999 testees are better than those of the 2019 testees.

3.2.6 VZH - Push-up test –factor: static and endurance strength of arms

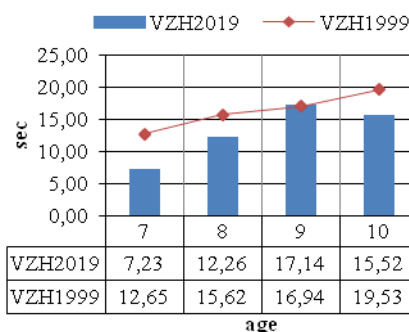
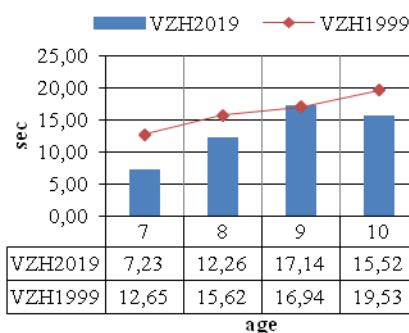


Diagram 18: Push-up endurance – VZH - boys

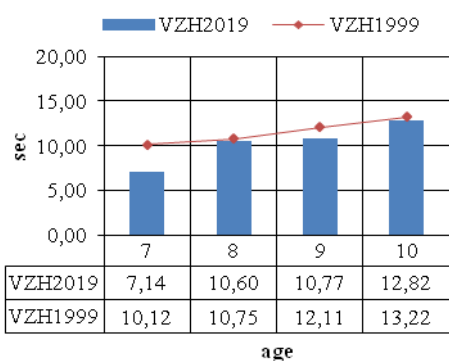


Diagram 19: Push-up endurance – VZH – girls

The push-up endurance test item evaluates the static and endurance strength of arms. There are statistically significant differences between the results of the 1999 and the 2019 testees, in particular, in 7-, 8- and 10-year-old boys and 7- and 9-year-old girls. The measurement validity is, however, problematic because the coefficient of variation (proportion between the standard deviation and the arithmetic mean) in all age categories of boys and girls significantly exceeds 50%. This suggests an extraordinary high dispersion of the measured values with regard to the arithmetic mean. Interestingly, this fact was observed by both Horváth (2001) and Turek(1999).

3.2.7 CBEH - Shuttle run 10x5m factor: running velocity with direction changes

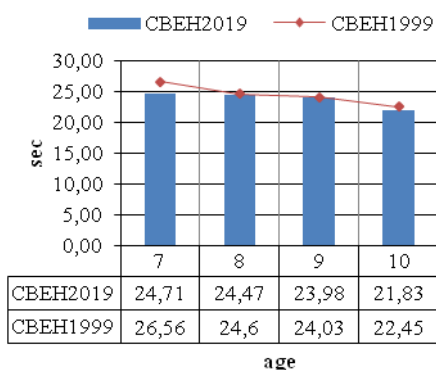


Diagram 20: comparison based on the shuttle run – CBEH - boys

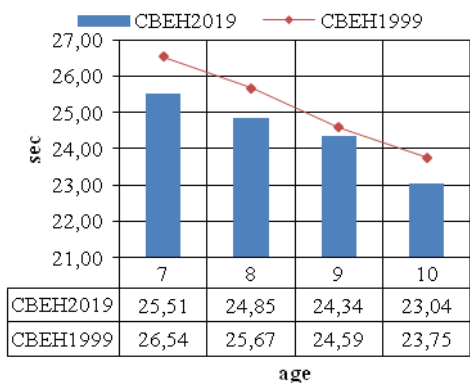


Diagram 21: Comparison based on the shuttle run – CBEH – girls

The t-test results suggest that statistically significant differences between the results of the 1999 testees and the 2019 testees have been confirmed for the shuttle run 10x5 m test item, used to evaluate the running velocity with changes of direction, only for 7- and 10-year-old boys and 7-, 8- and 10-year-old girls. However, the 2019 results are better than the 1999 results in all age categories of boys and girls.

3.2.8 VBEH - Endurance shuttle run factor: running endurance

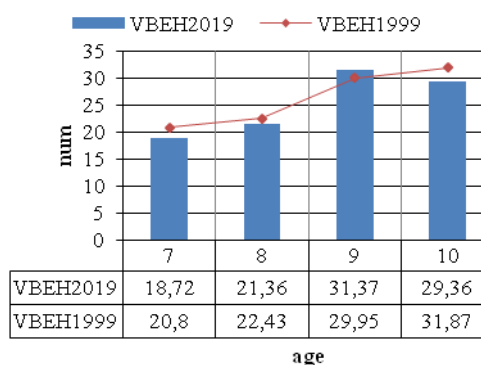


Diagram 22: Comparison based on the endurance shuttle run – VBEH – boys

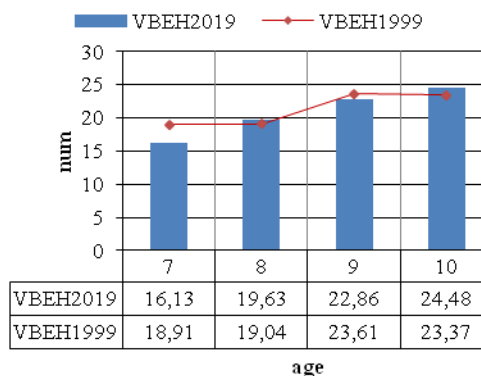


Diagram 23: Comparison based on the endurance shuttle run – VBEH - girls

The endurance run test results are ambiguous. The t-test has confirmed statistically significant differences in 7- and 9-year-old boys in favour of the 1999 testees. The 1999 results of the 8-year-old boys are better than the results of the 2019 testees, however, without any statistical significance. The results of the 9-year-old boys tested in 1999 are even worse than the results of the 2019 testees. Statistically significant differences in favour of the 1999 testees have been confirmed for 7- and 9-year-old girls. The categories of 8- and 10-year-old girls tested in 2019 achieved better results than the same age categories in 1999. However, these results are not significantly better.

4 Conclusion

The findings of our research can be summarized as follows:

- As far as somatic parameters are concerned, we have identified a substantial increase in children’s weight compared to the 1999 testees. This fact is also observed, for example, in Čillík (2016) and Šimonek (2018).

Furthermore, this observation was confirmed in the nationwide research focused on children attending the 1st year of primary school. The reason consists in the lack of motion and incorrect dietary habits of the present generation of children. While we know much more about correct dietary principles than in the past, children of this generation eat too much sweets, consume sweet drinks since the early childhood, and, unfortunately, the most popular food of many children is fastfood.

- The motion performance data witness to a similar situation. Turek (1999) developed standards of motion performance for primary school children. When comparing the 2019 results with these standards we cannot but conclude that the majority of the 2019 testees are at the level of 'under average down to poor'. Children do not move sufficiently; they mostly spend their time with mobile phones and at social networks. The motion performance results show that the differences between the 1999 and 2019 testees increase with the growing age. Sports are time- and money-consuming for parents. This is what not all of them can afford or wish to undergo. School circles are rare, and children can hardly spend their time outdoors without supervision. Two hours of physical education at school are not sufficient for healthy development of children. The more so that many children do not attend physical education at all, either due to health reasons or due to the lack of interest. In addition, even if we live in the 21st century there are a number of schools without a proper gymnasium. Our research thus has confirmed the hypothesis that motion performance of 7- to 10-year-old boys and girls has worsened compared to the situation 20 years ago. Moreover, there exists a positive correlation between the growing body weight and worse motion performance.

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Primary paper section: A

Secondary paper section: AM

FACILITY MANAGEMENT– TREND FOR MANAGEMENT OF SUPPORTING BUSINESS PROCESSES AND INCREASING OF COMPETITIVENESS

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Abstract: The search for the potential for cost savings, gaining more time for the core business, but also increasing the quality of outsourced activities is offered through coordinated management of facility management support processes. Facility management is a vital part of successfully operating a companies, because joins people, processes, the building and technology. The aim of this article is to provide the basis for the creation of an information base explaining the essence of facility management and point to the various dependencies and potential benefits from using facility management in the Slovak business environment. The methodology used a questionnaire survey and selected statistical tools for assessing the representativeness of the sample and evaluating the tested dependencies. Our research questions did not confirm a significant relationship between the capital structure of the company and increasing interest in these services by a growing number of customers. Our research was focused on pointing out the current level of offer of facility services in the Slovak business environment. The methodology used a questionnaire survey and selected statistical tools for assessing the representativeness of the sample and evaluating the tested dependencies. Our research questions did not confirm a significant relationship between the capital structure of the company and increasing interest in these services by a growing number of customers.

Keywords: Cost savings, facility management, facility services, outsourcing.

1 Introduction

In the recent years, the search for approaches and opportunities to reduce costs in many companies has focused on the management of support processes. The use of outsourcing principles in the implementation of facility management is becoming a certain trend solution. Awareness of facility management is growing and is being used more and more every year in the terminology of the European business environment. An interesting fact is that the issue of facility management is not only in Slovak and Czech Republic, but we dare to say that it has not yet been comprehensively processed in world literature. It contains several studies published in available worldwide databases. On the one hand, the region of Central and Eastern Europe is considered an area where the level of facility management is only in the beginning of realizing its potential compared to the countries of Western Europe. On the other hand, many companies in the region are increasingly focusing on streamlining the coordination of the management of ancillary business processes to create the potential to increase their competitiveness. For this reason, there is space in companies for the introduction and use of coordinated management of auxiliary and service processes, the so-called facility management.

Available research studies in the field of facility management currently deal with many areas related to the concept of facility management, especially with its use based on the principles of outsourcing. Ikediashi et al. (2013) present empirical testing of a structural equation model for the analysis of risk factors associated with the outsourcing of equipment services. In the paper of Lok & Baldry, (2016) it is possible to get acquainted with the solutions of the structure of the category of outsourcing relations between clients and service providers in terms of facility management. In his study, Bröchner (2017) deals with the determination of a method that is suitable for measuring direct productivity in relation to facility management providers, while Roper (2017) evaluates the progress in the management of auxiliary and service processes in the company. Vetráková et al. (2013) point to the potentials of facility management for the

competitiveness of companies in a specific sector of companies in the forestry timber complex. To retain or even increase competitiveness of companies the use of coordination approach of supporting business processes in terms of using outsourcing principles is used. Based on the above, the paper focuses on the presentation of the basic classification of the level of the current offer and the trend of the service facility portfolio in the Slovak business environment with an assessment of their dependence on the capital structure and duration of the provider's market.

2 Literature review and current market situation of facility management in the Slovak business environment

Currently, the facility management is considered one of the fastest growing technical and operational disciplines worldwide. Frost & Sullivan (2016) predict that by 2025, the global facility services market will exceed \$ 1 trillion using outsourcing principles. Facility management is becoming increasingly established in the terminology of the European business environment. It is a promising managerial approach, which seeks a detailed approach to the management of supporting business processes in order to increase the level of their quality, reduce risks, in order to create the potential to increase the competitiveness of the company. In his research, Sari (2018) states there is a significant difference in the development of facility management in Western European countries compared to Eastern and Central European countries. FM industry, however, is being a relatively new, which provides a huge opportunity for development, however research on this subject is still perceived as limited.

In his study, Štrup (2014) states that the very concept of facility management is considered from a terminological point of view to be a relatively new field which can be known in a simpler form from ancient times. These were food preparation services, home cleaning, or transport to the facilities needed for life. The form of security has gradually changed from slavery to today's commercial customer service. Kuda et al. (2012) and Vagner & Bartošová (2016) state that the term facility management is dated to the 1970s in the United States. Facility services were first associated with the field of cleaning and janitorial work, and gradually this management system expanded with its development. The portfolio of services has been gradually expanded

Worldwide, facility management did not begin to develop until the 1990s, when the International Facility Management Association (IFMA) was founded, which supports more than 24,000 members in more than 100 countries. The role of IFMA is to help with professional growth through various programs, training courses, conferences, and support for the implementation of research that enhances the knowledge and skills of facility managers (IFMA, 2018..

The definition of FM's substance has historically undergone many modifications. We provide at least a few comparisons in the overview. As Pitt & Tucker (2008) emphasizes, facility management is the integration and harmonization of non-core processes, including those related to the space needed to operate and maintain businesses to support an organization's core objectives. Noor & Pitt (2009) emphasize that FM can create a surroundings that is unified for the management of a company's primary operations, adopting and integrating a view of services in order to increase the quality of defined core processes. According to Dvořáček & Tyll (2010), FM represents a special form of outsourcing and is focused primarily on the support activities of the organization in order to reduce their costs and increase their quality. In their work, Junghans & Olsson (2014) discuss FM as a new scientific discipline, considering it as integrated workplace management to improve organizational performance. However, the main part is the IFMA definition, which defines FM as a discipline involving several disciplines to

ensure the functionality of the built surroundings by integrating people, place, processes and technologies. Somorová (2017) state that according to this definition FM is characterized by the interconnection of the three areas - axis of facility management (Fig. 1). Later, a fourth area was added - technologies that provide the technical background of the company, the functionality of business processes and make it easier for employees to perform their duties.

Figure 1: Axis of Facility Management



Source: Potkány et al. 2015.

The form of facility management and their coordination can be solved by using the principles of insourcing, outsourcing or a combination of them. (Potkány, 2015). However, each of the available forms requires a coordinated approach at the level of defining the competencies and powers of the facility manager. However, the most common form is outsourcing, which, with the right setting and compliance with the conditions of the service-level agreement, creates a great potential for positive effects of facility management. It is about saving costs, gaining more time and attention to managing the core business, increasing the quality of processes with the transfer of risk to the service provider. Similar arguments in their work presents Choi et al. (2019); Kim et al. (2018); Redlein & Jensen (2017); Hitka et al. (2017); Lahiri (2016); Hitka et al. (2016) and Olsovska et al. (2016).

In theory, it is possible to encounter several possible classifications of service facilities. For example, Kuda et al. (2012) propose classification in two respects. One concerns space and infrastructure and the other people and organizations. The subject standard STN EN 15221-4: 2012 states that the categorization structure should be closely linked to business processes so that user access to information is managed intuitively. Petty (2016) in his work presents the classification of facility services to the hard services (related to the object where the services are used) and soft services (associated with employees and the conditions of their work). For our needs, we will use the categorization of supporting business processes, in which the application of facility management principles is possible, according to the Slovak Association of Facility Management (SAFM). This classification consists of 3 main groups, namely technical services, support services and business services. For better clarity, we present a more detailed specification of the portfolio of offered service facilities:

- technical services: technical administration and maintenance, control engineering, energy management, HVAC (heating, ventilating, air-condition) external structures, repair and regular service, CAFM (Computer-Aided FM) and other technical services,
- support and soft services: data services, cleaning, cleaning, including special and external, security services, waste management, catering, vending, canteen management, reception, postage, printing, garden and landscaping, fleet management, fire protection, parking services, event, workshop and other support services,
- entrepreneurial (Business) so-called administrative services: accounting, controlling, training, health care, other education, property management, planning, use of

premises, design, purchasing, insurance, and other FS Business services (SAFM, 2018).

The results of the SAFM study in cooperation with Interconnection Consulting (2018) focused on a comprehensive analysis of the facility management market in the Slovak business environment show that the annual performance increased from 1.211 billion. € to 1.271 billion €. As can be seen from Fig. 2 soft and support services have a dominant share in the market of 21.10% in 2018. The second most frequently used facility management services are technical services in shares of 39.50%. The assumption of using this type of services by 2021 is with a forecast of overrun of 40%. With the lowest level of representation are entrepreneurial or administrative services with a share of 8.40% in 2018. However, even here the future potential for their growth is expected (Fig. 3).

Figure 2: Percentage distribution of the facility management

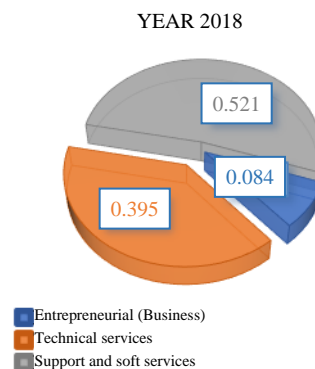
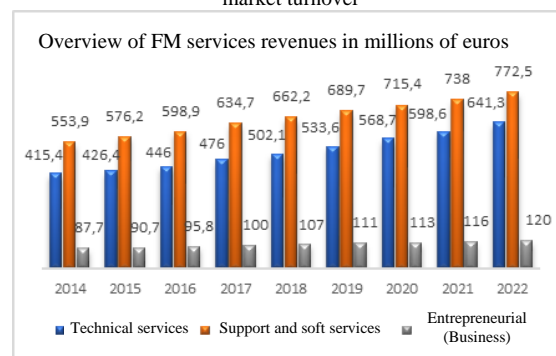


Figure 3: Forecast of the development Facility Management market turnover



Source: Own processing according to SAFM Guide (2018, 2019).

3 Research objective and methodology

This paper uses data from a questionnaire survey, which was focused on micro, small and medium-sized enterprises providing facility management services in the Slovak business environment. We specifically addressed all 100 companies associated in SAFM with a return of 52%, which took part in the survey. According to the organization's professional representatives create a decisive share of the service facility market. It is not known how many other companies operate in the market, but according to expert estimates, these are only a few micro and small companies with minimal supply and a negligible share of total turnover. The survey was conducted between September and October 2019 through the virtual support of Google Forms questionnaire - <https://forms.gle/pjWnsQnW8ReDTWhe7>.

For this paper, we focused on the following research tasks:

Is there a statistically significant relationship between the capital structure of a company and the complexity of offering a portfolio

of facility management services? Is there a statistically significant relationship between the length of activity of facility service providers in the market and the growing interest in these services by the number of customers? We were also interested in question: do facility service providers prefer some potential facility management customers benefit?

To evaluate the classification of enterprises we used classification by European Commission Recommendation 2003/361 / EC of 6 May 2003, as follows Medium-sized enterprises, small enterprises and micro enterprises by staff headcount.

Depending on evaluation research task we used statistical tools for evaluation, as Fisherov exaktný test, Spearmanov Rho test a McNemar test.

Ostertagová (2012) states that Fisher's exact test verifies the null hypothesis, which states that the shares of the two basic sets are the same, i.e. the variables are independent. The P-value of the Fisher test expresses the probability that, assuming the equality of the proportions of the basic sets, we will select random samples whose absolute value of the difference in the proportions is equal to or greater than our finding. If the P-value is small (most often less than 0.05), we reject the null hypothesis and consider the variables to be statistically dependent.

Hanák (2016) claims that the Spearman Rho test, which is based on the order of variables and gives a statistical dependence of the so-called correlation between two quantities. Unlike Pearson's coefficient, we can also apply it to non-normally distributed data, and it can capture other than just a linear relationship between variables. At the same time, it is not as sensitive to extreme values (outliers) as Pearson's correlation coefficient. In the results of the statistical analysis, the abbreviation CORR is used for this coefficient.

McNemar test uses a paired test of two dependent selections for two binary (alternative) variables, where 1 means the presence and 0 the absence of a character. Kaščáková et al. (2010) state that the null hypothesis of agreement of abundances on the secondary diagonal in the 2×2 contingency table is tested:

$$H_0: \pi_{12} = \pi_{21} \text{ oproti } H_1: \pi_{12} \neq \pi_{21}. \quad (1)$$

If the condition $n_{12} + n_{21} > 25$ applies and if the null hypothesis is valid, the following statistic has an approximately χ^2 distribution with one degree of freedom.

$$Q_M = \frac{(|n_{12} - n_{21}| - 1)^2}{n_{12} + n_{21}} \quad (2)$$

During the test of representativeness of the sample, we used Pearson's chi-square test of compliance, while the representativeness was verified on the sample of the scope of the providers of facility services in the relevant region of Slovakia. The relation for $[\chi^2]^2$ test of good agreement with $(k-1)$ degrees of freedom can be quantified according to relation 3. If the relation $\chi^2 > \chi^2_{1-\alpha}(k-1)$ will apply, then it is possible to determine the assumption at the level of significance α reject. Thus, if the assumption is formulated so that the difference between the baseline and the sample is statistically insignificant, by rejecting this hypothesis, we can argue that the difference between the baseline and the sample is unlikely to be due to random selection.

$$\chi^2 = \sum_{i=1}^n \frac{(n_i - np_i)^2}{np_i} \quad (3)$$

Where: n_i - observed frequency of occurrence, np_i - expected numbers of research objects.

4 Results and discussion

The survey addressed companies associated in SAFM, which participated 52 companies of the total 100 companies. Pearson's chi-square test of goodness of fit, which was used for the representativeness test, is presented in Tab. 1. Representativeness was verified on a selection feature of the scope of service providers in the relevant region of Slovakia, while some of the companies offered their services in different regions of Slovakia.

Tab. 1: Pearson test of good conformity according to the regional affiliation of the companies

Region of Slovakia	np_i		n_i		$(n_i - np_i)^2$	$(n_i - np_i)^2 / np_i$
	number	%	number	%		
Bratislava region	40	20.41	25	21.00	0.35	0.017
Region of Banská Bystrica	20	10.20	18	15.13	24.30	2.38
Region of Trnava	21	10.71	15	12.61	3.61	0.34
Region of Prešov	18	9.18	15	12.61	11.76	1.28
Region of Košice	22	11.23	14	11.76	0.29	0.03
Region of Žilina	21	10.71	13	10.92	0.05	0.00
Region of Nitra	28	14.29	10	8.40	34.69	2.43
Region of Trenčín	26	13.27	9	7.57	32.49	2.45
Total	196	100	119	100		8.927

Source: Own processing.

Based on the input data of the Pearson Test, it can be stated that the value of χ^2 at the significance level $\alpha = 0.05$ at 9 degrees of freedom $(10-1)$ is 16.919. As the results of our testing show, the value of χ^2 is at the level of $8.927 < 16.919$. Based on this test, we state that our sample can be considered as representative based on the sample.

In the first research question, we tested the existence of a dependence between the capital structure of the company and the complexity of the offer of the portfolio of facility management services. We assumed that with the increasing share of foreign capital, the breadth of the offer portfolio of the service facility will also increase adequately. We verified the obtained results by means of Fisher's exact test at the level of significance $\alpha = 0.05$. The test result was p-value = 0.193 (Table 2). This means that we were unable to verify the statistical dependence between the capital structure of the company. Within our sample, we can state that there is no dependence between the capital structure of the company and the complexity of the offer of the portfolio of facility management services. This statement is positive towards companies with domestic capital, whose portfolio of facilities services is thus fully competitive with companies with foreign know-how in the field of facilities management. Practice firms confirms, that soft cleaning and tidying services, security services, catering and vending, as well as technical management and maintenance services for buildings have a dominant share. Other types of services are less represented in the offer, but their growth potential is expected. Complexity of Offered FM'Services in the Slovak Business Environment in their study dealt Potkány & Kováč (2015). Unfortunately, this statement of ours cannot be compared with the results of similar studies by other authors, because analyzes of similar research are not published in the available databases. But the relationship of the capital structure was investigated, for example, by Stryckova (2017) in dependence between the key indicators of business competitiveness: leverage and corporate performance. Also Chadha & Sharma (2015) presented the impact of capital structure and firm performance of Indian companies, as well as Bayaraa (2017) which pointed out the influence of capital structure to the financial performance determinants of Mongolian companies.

Tab. 2: Chi-Square Tests

	Value	df	Asymptotic Significance (2 sided)	Monte Carlo Sig. (2 sided)		Monte Carlo Sig. (2 sided)			
				Sig.	99% Confidence Interval		Sig.	99% Confidence Interval	
					Lower Bound	Upper Bound		Lower Bound	Upper Bound
Pearson Chi- Square	68.152 ^a	36	.001	.075 ^b	.068	.081			
Likelihood Ratio	31.144	36	.699	.330 ^b	.318	.343			
Fishe's Exact Test	48.839			.193 ^b	.182	.203			
Liner-by- linear Assoc	6.573 ^c	1	.010	.010 ^b	.007	.012	.009	.007	.012
N of valid Cases	52								
a. 49 cells (94.2%) have expected count less than 5. The minimum expected count is .02. b. Based on 10000 sampled tables with starting seed. c. The standardized statistic is 2.564.									

Source: Own processing.

In another research question, we assumed a statistically significant relationship between the length of operation of facility service providers in the market and the increasing interest in these services by the number of customers. Our assumption was based on the fact that the longer the company operates in the market, the greater the interest in providing its services. This is reflected in the increasing number of customers in relation to its performance. A similar dependence but following the impact of the insurance costs on the competitiveness of food industry enterprises in the context of the existence on the market dealt in their study Shirinyan & Arych (2019). Also, Kusumastuti & Sutoyo (2019) tried to point to obtaining law protection attempt for SMI in Indonesia in inter alia, depending on the length of the market existence. This assumption was the logical result of the fact that all the important companies in the given market, which we analyzed, participated in our survey. Using the Spearman test, we found at the level of significance $\alpha = 0.05$ and the resulting p-value of 0.091 (Table 3), our assumed dependence was also not confirmed.

Tab. 3: Spearman's Rho Tests

		Existence on market	Interest in services
Spearman's Rho Tests	Existence - Correlation Coefficient Sig. (1-tailed) N	1.000 52	-.091 .276 52
	Interest - Correlation Coefficient Sig. (1-tailed) N	-.091 .276 52	1.000 52

Source: Own reaserch.

Within our sample, we can state that there is no relationship between the duration of the service facility providers in the market and the growing interest in these services with a growing number of customers. This finding is quite interesting also due to

the fact that the scope of the facility of companies on the Slovak market exceeded 10 years. The argument for our statement was mainly the fact of the increasing share of revenues in the given segment and, in fact, the stable number of providers of these services in recent years. The question remains whether the dependence would not be confirmed by expanding the sample of respondents, because at the level of significance level of 10% the statement could be accepted.

We were also interested in the research task, which of the potential benefits of using facility management services based on the principles of outsourcing is considered important by providers of facility services. Businesses had a choice of several options logically based on the arguments they make in their outsourcing work (Edvardsson & Teitsdóttir 2015; Iqbal & Dad 2013; Ikediashi et al. 2013; Dvořáček & Tyll 2010; Di Gregorio et al. 2009). Potential benefits from the use of facility management services are presented in Tab. 4. The order of response preference was determined by the McNemar test.

Tab. 4: Potential benefits of using facility management services

As part of the offer of your services, which of the potential benefits for your customers do you consider important?	n	%	Average ranking
Cost savings	42	26.9%	5.33
More time to solve the main subject of business	35	22.4%	4.86
Improving the quality of activities performed	31	19.9%	4.59
Increasing the company's performance and profit	22	14.1%	3.98
Transfer of risk to the service provider	12	9.0%	3.44
Gaining expert know-how from outsourced activities	10	6.4%	3.17
Other	2	1.3%	2.63
Σ sum of answers	156	100%	
Friedman test	p-value = 0.000		

Source: Own processing.

The results of the McNemar test at the significance level $\alpha = 0.05$ and the resulting p-value of 0.000 identified the 3 most important potential benefits that should influence the opinion of customers in favor of the application of outsourcing principles in the use of facility management services. These include cost savings, gaining more time to manage the core business as well as improving the quality of activities performed and increasing the company's performance. This also confirms the results of many studies (Iqbal & Dad 2013; Vetráková et al. 2013; Jyoti et al., 2015; Lopez 2014; Rainborn et al. 2009), which deal with the use of outsourcing principles in the management of enterprises in connection with increasing the performance and competitiveness of the analyzed enterprises.

5 Conclusion

If a company wants to be successful in the market and maintain its position in the competition, it should, in addition to revealing potential reserves in costs, also monitor current management trends. The issue of management trends in companies is also dealt with by the authors Dobrovič, Kmeco, Gallo, Gallo jr. (2019), who emphasize the use of the most comprehensive management tools that evaluate and improve the overall performance of the company and thus is a model of excellence EFQM.

The part of economy also includes SMEs operating in markets, which must be competitive with large companies, which causes managers to look for solutions to the progressive development of the company and build a competitive position. One such method is operation within group purchasing organizations. The analysis of Zimon (2018) found that the selection of a suitable

organization for group purchases has a great impact on the financial situation of the company - the dynamics of revenues, costs, liquidity and profitability and can thus become competitive. Increasing customer satisfaction and achieving more reliable production are among the next steps to achieve high competitiveness. The paper by Hajda, Andrejkovič, Mura (2014) shows the proposed experiments as a method of reducing errors in order to improve business processes, reduce costs and thus improve market position and the subsequent opportunity to offer the customer a lower selling price.

Another of the possible popular worldwide managerial approaches is the use of coordinated management of supporting business processes through facility management using the principles of outsourcing. In this document, we present the available classification and the current level of service facilities in the Slovak business environment with an indication of their possible future growth. We also examine the dependence of the breadth of the facility's portfolio of services on the capital structure of Slovak companies providing these services, as well as the possible dependence of the length of operation on the provider's market and the growing number of customers. This is an initial survey in this area, which has not yet been carried out to such an extent.

In our case, we used the question survey and this paper utilizes 52 facility service companies that are associated in SAFM. Despite the first impression of the low number of companies in the sample, their representativeness is verified through Pearson's test of good agreement according to regional affiliation. However, the basic set consists of only a little more than 100 companies and is a certain limit of this contribution, which we did not manage to fulfil, despite great efforts. The dependence of the monitored variables was not confirmed by the selected tools of statistical analysis. The reason is probably only the short operation of companies in the market (mostly less than 10 years) and the effort to constantly expand the portfolio of services as well as raising awareness of the effects and principles of FM in the professional public. Through the survey, we pointed out the current level and growth potential of selected types of services in the classification of technical, soft and support as well as business services, which currently generate more than €1.27 billion in market turnover. Positively and with practical significance, we have revealed that the most preferred potential benefits of FM implementation are cost savings, gaining more time to manage the core business and improving the quality of activities performed. It is certainly possible to direct these positive effects towards increasing the performance of companies. The proposal of the methodology of how it would be possible to measure the increase in performance using the principles of outsourcing in management is provided by the work of Potkány et al. (2016). This applied procedure can eliminate the risk of side effects or ideas of FM implementation to an acceptable level, at least in the area of not achieving the required cost savings. The research results will be subsequently used in the analytical part of the dissertation „Perspectives of Facility Management in small and medium-sized enterprises” and will be complete questionnaire survey from other side – demand of facility management.

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Primary Paper Section: A

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THE MORAL VALUE ORIENTATIONS OF UNIVERSITY STUDENTS

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This article is an output of the project: KEGA 025PU-4/2020 Development of students' moral and critical thinking in teacher training programmes.

Abstract: Moral value orientations are of a general nature, which means that they also influence other values. In the case of students preparing for the teaching profession, their moral value orientations are key because teachers should systematically help students to integrate them. The aim of this study is to compare the levels of moral value orientations in students of teaching and non-teaching programmes of study and to find out whether there are differences according to age, gender, university, teaching vs. non-teaching study programme, year of study and level of religious belief. The Ho Po Mo questionnaire was used for the study. The research sample consisted of 624 women and 447 men (n = 1.071) studying at eight public universities in all Slovak regions. The results showed a significantly higher level of moral orientation of students of teaching programmes in comparison with students of non-teaching programmes.

Keywords: Moral value orientations. University students. Teaching and non-teaching programmes of study.

1 Introduction

Values and value orientation are currently among the topics discussed at the societal level. We have observed a boom in the use of these terms with reference to their meaning and connection, as well as with the expectations upon them in relation to the potential formation of societal processes. At the same time, we have observed that some social groups state that values have declined and in the past things were better in this respect. In addition, we see an ever-decreasing societal consensus on which values are important to the individual and society, and should therefore be binding. This discussion also covers the education and training that takes place in schools. Values are expected to offer a solid foundation to provide a reliable orientation to people and society, especially in a situation where everything is changing. However, values are not immune to this movement either.

In the field of values today we can observe several trends: 1. Especially in professional circles, there is a noticeable attempt to update traditional values to current conditions, which is in some cases associated with the statement that some values are no longer sustainable at present. 2. Chaos in values – what is an indisputable value to one person is despised by another. 3. Individual groups (ideological, political, cultural, intellectual ...) question the values of opposition camps. 4. The questioned values are redefined by groups that consider them important to update them to today's conditions, illuminate their original essence and meaning, or rootedness in history, thereby strengthening their importance and social need. 5. Bipolar validity – values are lost because their society has stopped accepting them, on the other hand, there is an effort to preserve existing or build new values.

2 Values

According to Oyserman (2015), values are internalized cognitive structures that guide choice by evoking a sense of right and wrong (e.g. moral values), a sense of priorities (e.g. personal success versus group good) and create a willingness to make sense and see patterns (e.g. trust versus distrust).

The socio-psychological conception of a value is a subjective appreciation or degree of importance that an individual attaches to certain things, phenomena, symbols, other people. (Průcha – Walterová – Mareš, 2013, p. 92). Hartl and Hartlová (2000, p. 192) define a value similarly, as a property that an individual assigns to a certain object, situation, event, activity, but in connection with the satisfaction of his needs and interests. Kolář et al. (2012) determine a value as an attitude, a person's belief in what is important, necessary, valuable, what is to be strived for.

Values refer to everything that brings satisfaction, or they speak of values in a narrower sense, as basic cultural categories that reflect the higher things - moral, social and aesthetic tendencies, norms and ideals of a person. Values are therefore created by human evaluation. Some values can be shared by whole groups or the whole of society. Certain values (e.g. moral) have permanent absolute validity, others are variable and of short duration.

From a pedagogical point of view, the value systems of young people are important. Education is a social value, and the role of education is important for the life of the individual and for the development of society. Values in the form of the goals and contents of school education are explicitly conceived in educational programmes (Průcha – Walterová – Mareš, 2013, p. 92). Through education, it is possible to influence the creation and hierarchy of socially recognized values by connecting three basic components of a value - emotional, cognitive and behavioural. Value education, which is also referred to as teaching values or teaching for values, cultivates value-based thinking, feeling, action, value-based attitudes (Kolář et al., 2012) and the transfer of the value canon in intergenerational continuity, which has much broader educational effects than just the cultivation of values (Jedličková, 2017). Passing on values in the educational process is a fundamental and essential role (Pintes, 2011).

An individual, a social group, or a society as a whole professes a number of values, but these are not of equal importance. Under the influence of the family and all groups in which the individual is socialized, a classification of values is created based on their importance, i.e. a value system, which is a hierarchically arranged list of values that reflects the real order of values shared by the particular population group. It is detected by special research, which clarifies e.g. differences in the value systems of the younger generation and adults (Průcha – Walterová – Mareš, 1995, p. 77).

3 Overview of work on the topic

The question of values is richly represented in the literature. We could say that this is a phenomenon that is receiving considerable attention in professional and scientific literature. Scientific and professional publications systematize the issue of values; represent different perspectives on the question; present the results of research on the values of specific groups and nations; describe how values can be built as part of the educational process; or what influence the family, the media, peer groups and the societal atmosphere have on the formation of values. The pedagogical interest in value research in young people can take two forms: authors want to determine the extent to which students can adapt to the value system valid for a certain society, or they want to find out what values young people can bring to the next generation.

Research dealing with values varies in many dimensions – there are varying research areas, goals, country, or countries of research – but particularly there are varying the degree of theoretical and methodological elaboration. In relation to the rest of the world, the Slovak environment is limited in many ways: the number of researchers dealing with values, financial resources, the level of universities and research institutions, methodological and theoretical trends, and to some extent the language barrier. From the huge amount of value-oriented research, we select examples of studies of two categories for the needs of this paper: Research on the values, structure and changes of the value system of university students: (Al-Yahyai, 2019; Kar, 2018; Karadeniz Hacisalihoğlu, 2018; de Agrela Gonçalves Jardim et al. 2017; Głaz, 2015; Oliveros et al. 2015; Cortés-Pascual, 2014; Albert – Thilagavathy, 2013).

Programmes, techniques and factors influencing the values of university students: (Chen, 2020; Husin, 2019; Lakshmi – Paul,

2018; Zakharova, 2018; Hernández et al. 2015; Zajda, 2014; Jarrar, 2013).

4 Research problem

The aim of the research was to determine the level of moral value orientations in university students. We chose moral value orientations for two reasons. The first is the universality of moral values in the sense that they influence all other value orientations and at the same time they influence the thinking and actions of the individual in the most general sense. The second reason is the effort to find out whether there will be significant differences between students studying teaching and non-teaching programmes. In the case of students preparing for the teaching profession, we consider moral value orientations to be key, precisely because teachers have to help students integrate values.

4.1 Hypotheses

Teaching programmes include the study of theoretical knowledge and practical training aimed at justifying, explaining and integrating values, so the first hypothesis has the following wording: H1 The level of the moral value orientations of students of teaching will be higher than that of students of non-teaching subjects.

An individual with a strongly integrated religious faith is under the considerable influence of the Judeo-Christian tradition, in which the moral dimension is emphasized based on respect for the transcendent plane. This led us to establish the second hypothesis: H2 level of the moral value orientations of Strongly religious students will be higher than that of weakly believing / non-believing students.

There is no reliable measuring tool for measuring the level of religious faith, therefore we made the division into strong believers or weak/non-believing students based on the respondents' subjective evaluation. They could indicate the level of their religious faith on a scale from 0 to 10. If they marked values 8, 9 or 10, we included them in the category of strong believers. The others, who marked values from 0 to 7, were in the category of weak believers / non-believers.

5 Methodology

To investigate the research problem, we used the standardized HO PO MO questionnaire from Vonkomer. Specifically, we used the part that examines value orientations. It contains 11 real situations, each of which has 5 alternative answers that examine the following value orientations: a) educational, b) aesthetic, c) moral, d) economic, e) social. The respondents sort the individual options into order. The respondents select as first the alternative to which they attach the most importance and they assign it the numerical value 5. The answer with the least meaning to them is placed in the fifth place, where it is assigned the numerical value 1. From the above situations and alternative answers, it follows that each value orientation can range from 11 to 55. In order to make the results easier to interpret, we present the percentage of individual averages from the measured values. We determined the level of subjects' moral value orientations in relation to gender, age, year of study, university and subjective level of religious belief – believers or atheists.

The sample examined is representative in terms of the gender ratio. According to statistical data valid as of 31.10.2019¹, fulltime students at Slovak public universities with Slovak citizenship were 57.76% women and 42.24% men. The sample consists of 624 women and 447 men studying at eight universities in all Slovak regions (UKF Nitra, KU Ružomberok, TU Košice, UK Bratislava, UPJŠ Košice, PU Prešov, UMB

Banská Bystrica, SPU Nitra). We divided the respondents into five age groups: 19-20 years, 21-22 years, 23-24 years, 25 and more years.

6 Moral value orientations

Students of teacher-training programmes had about 3.4% higher scores in moral value orientations than non-teaching students. This is a statistically significant difference at the 1% level of significance. This confirmed hypothesis no. 1. We measured a significant difference with an approximately 5.6% higher score among Comenius University students in Bratislava compared to students at Constantine the Philosopher University in Nitra. This is a statistically significant difference at the 1% level of significance. Students at Catholic University in Ružomberok had approximately 3.2% higher scores than UKF students in Nitra, which is a statistically significant difference at the 5% level of significance.

The overall averages of moral value orientations increased by year of study, from 50.2% in the first year to 52.6% in the fifth year. We can also identify an increasing trend with increasing age, where the average levels of moral value orientations increased from 50.3% in the 19 - 20 years age category to 53.7% in the 25 years and over category. The same tendency is visible in the regression analysis for moral value orientations (Table 1). The lower the age group, the lower the level of moral value orientations compared to the base group - the group of students aged 25 years and over. However, it should be emphasized that there is no statistically significant difference in any age group and also that the level of moral values holds a stable third place among the five value orientations throughout the study.

We identified a higher level of moral value orientations among strongly believing respondents (those who evaluated the level of their religious faith on a 10-point scale with values of 8, 9 or 10). They showed a level higher by approximately 1.5% compared to respondents who evaluated the level of their faith with values from 0 to 7, which was a statistically significant difference at the 10% level of significance. This confirmed hypothesis no. 2.

6.1 Discussion

The preparation of future teachers includes theoretical subjects and practical training, which emphasizes the transfer of values. Teachers are expected to express specific values and practice them in the educational process and also in other areas of life. In addition, teachers are trained to help integrate values into the lives of the pupils and the students they work with. If necessary, they are obliged to identify and correct incorrect or presumed values at the very beginning of the acquisition process in order to avoid their internalization (Petrová – Kozárová, 2018). An important role in this process is played by the level of critical thinking of students and teachers (Kosturková, 2019; Kosturková – Ferencová – Šušáková, 2018) as well as the means and motives of social communication (Határ, 2019). For a certain part of society, contact with the transcendent world also has a role (Feník – Lapko, 2019) and it is seen as the determining standard for all values (Kučerková – Režná, 2014).

In the case of moral values, we can say that among the five values examined, but also overall, they have the most general character. This means that practicing or not practicing them has a significant impact on all the other values and areas of life. For this reason, teachers can be expected to have a higher level of moral value orientations. However, it must be said that this research does not provide a clear answer to the question of the extent to which the higher level of moral values was caused by the university and to what extent by the students socialization and education up to that point. However, as there was a slight increase in moral value orientations during the period of study, this could indicate that higher education strengthened the orientation that respondents brought to university, but did not fundamentally change it.

¹ *Vysoké školy k 31. 10. 2019 – verejné, denná forma.* [online]. Centrum Vedecko-technických informácií SR. Podpora vedy, výskumu, vývoja, inovácií a vzdelávania. [cit. 2020.04.05.] Dostupné na: https://www.cvtisr.sk/cvti-sr-vedecka-kniznica/informacie-o-skolstve/statistiky/statisticka-rocenka-publikacia/statisticka-rocenka-vysoke-skoly.html?page_id=9596.

Table 1 Results of regression analysis with dummy variables for moral value orientations

Moral -r	Coef.	Std. Err.	t	P>t	[95% Conf.	Interval]
women	.0030827	.0083188	0,37	0,711	-.013241	.0194065
age 19-20	-.0250712	.0181743	-1,38	0,168	-.060734	.0105915
age 21-22	.0217578	.0145751	-1,49	0,136	-.050358	.0068423
age 23-24	-.0172927	.0136999	-1,26	0,207	-.0441754	.0095901
university KU	.0323322	.0141976	2,28	0,023	.0044728	.0601916
university TU	.0195039	.0148184	1,32	0,188	-.0095736	.0485815
university UK	.0556079	.0175833	3,16	0,002	.0211049	.090111
university UPJS	.0137637	.0183772	0,75	0,454	-.0222973	.0498246
university PU	-.0135822	.0143453	-0,95	0,344	-.0417314	.014567
university UMB	-.0023271	.0152709	0,15	0,879	-.0276383	.0322926
university SPU	.0107103	.0250045	-0,43	0,668	-.0597756	.038355
teaching prog.	.0336917	.0108803	3,10	0,002	.0123416	.0550417
year of study 2	.0001642	.0119307	0,01	0,989	-.0232469	.0235753
year of study 3	.0032906	.0160715	0,20	0,838	-.0282459	.0348272
year of study 4	-.0017152	.0146836	-0,12	0,907	-.0305282	.0270978
year of study 5	.0012281	.0181674	0,07	0,946	-.0344211	.0368772
believer	.0152903	.0081377	1,88	0,061	-.000678	.0312586
non-believer	-.01595	.0111382	-1,43	0,152	-.0378061	.005906
atheist	-.0172233	.0118028	-1,46	0,145	-.0403836	.0059369
cons	.5051243	.0256867	19,66	0	.4547203	.5555284

The importance of the explicit formation of moral values in the educational process is underlined, for example by Javed et al. (2018), who in their research compared the tendency towards forgiveness and the level of moral values in 9 to 12-year-old students at private and public schools. For both the examined indicators, significantly higher scores were found among students of private schools and they explained that these schools have more resources for better teachers, there are fewer students in the classroom so teachers can pay more attention to them, but especially every day the teaching process begins with moral value lessons. In contrast, public schools do not have such teaching, nor do they have other formal ways of bringing moral values to students. It should be emphasized that although the students were aged 9-12 years, which is a completely different age category than the respondents to this research, the aforementioned research by Javed et al. (2018) confirms the important of explicit teaching for moral values, which in this case could be further strengthened by the age, at which it is easier to pass on these values to the pupils and to integrate them.

If, as stated above, it is true that students of teaching programmes have already come to university with a higher level of moral value orientation, then it is necessary to answer a further question: why did they choose teaching programmes? We can express our satisfaction with this, in the sense that it is a required prerequisite for the teaching profession. But that does not answer the question. Since this characteristic does not change fundamentally during university studies, it could indicate that there is a relationship or connection between a preference for specific values and the choice of profession, or at least university studies. This statement has logic, because if some values are integrated, then the individual behaves in accordance with them in specific situations. In this case, they highly esteem moral values and so choose a profession where they can live those values and at the same time help the pupils and students in their charge to integrate those values. This fact is also supported by the findings of Kaliská and Kaliský (2014), who state that in the assessment of the differing levels of moral competence between students and teachers of ethical education, they did not find significant differences.

The proportion of respondents who professed one of the Christian denominations was 87.95%. This religion places emphasis on moral norms derived from the Ten Commandments. We assumed that strongly believing respondents would have higher levels of moral value orientations, which was also confirmed. However, it should be borne in mind regarding this question that the level of religious faith cannot actually be measured exactly, so we rely on the respondents' subjective evaluation. They may use different criteria to indicate the level of faith, so that different contents may be under the same designations. e.g. the level of religious faith marked with the value 10 - the highest possible level - may indicate a significantly different content or level for specific respondents. Another question that ought to be mentioned is whether religious faith positively correlates with the integration of moral norms proclaimed by the particular religious denomination. The research presented did not examine this question.

We measured a higher level of moral value orientations compared to the base group –students at Constantine the Philosopher University in Nitra - in respondents from Comenius University in Bratislava (a statistically significant difference at the 1% level of significance) and in respondents from Catholic University in Ružomberok (a statistically significant difference at the 5% level of significance). Students of Catholic theology - future priests (theologians), who were part of the research sample of both mentioned universities, could have a strong influence on this result. The preparation for the vocation of a priest emphasizes moral values derived from the Judeo-Christian tradition in both theoretical and practical areas. However, even here it is necessary to be careful when assessing the impact of higher education, in terms of what share of influence the family, other social environments and previous school education have had on the current situation.

However, in the case of the training of future priests, the community way of life or education may also have a significant role. Theologians live in a closed community in which they pray and study together. In this context, we give an example of socialization of moral values, cited by Akpakpan and Akpakpan (2018). This is the educational activity within the closed Mbopo community (in the Ibibio area in Nigeria) ensuring the transition or initiation of young girls into womanhood. According to the authors, this community has been and remains a real medium for maintaining morals among young women. When a girl reaches the age of about sixteen, her parents will provide her with access to a fattening room. This is where the girl prepares for the role of mother and wife. The girls are kept in closed isolation and must consume the food presented, regardless of their appetite. The only visits allowed in this isolation are older women from the community, who teach traditional lessons on marital etiquette, social customs, and behaviour. Traditional music and dance are used to strengthen the desired effect.

From our point of view, this is an unacceptable way of preserving tradition, in which there is no respect for personal freedom, justification, explanation and, ultimately, human dignity. On the other hand, this example illustrates how a closed community can convey specific values.

The family is also a somewhat closed community, although as a child gets older, the closed nature of the family is eliminated as the child enters other communities. The constant presence of the child among family members from an early age, the same views, norms, demands, and even sanctions for punishing deviations from the required behaviour and rewards that strengthen compliance with standards. Because the child, until a certain age, does not have the ability to judge what the family demands of them, they will naturally acquire the values, norms, and behaviours that become their lifelong heritage. At a later age, of course, they can move away from family norms, though with some effort needed to overcome the norms rooted in family socialization in combination with other influences – education, media, social environment. An example is Mendel's research (2018), which examined attitudes towards marriage and cohabitation from the perspective of three generations – grandparents, parents and university students. The research showed

statistically significant differences between the generation of grandparents compared to the generations of parents and students. As many as 70% of grandparents agreed with the need for marriage (fully agree 48% and mostly agree 22%). Among parents it was 45% (fully agree 14%, mostly agree 31%) and in the category of university students only 34% (fully agree 11%, mostly agree 23%). This example illustrates the fact that the values acquired in family socialization are not necessarily permanent.

7 Conclusion

The results of the research confirmed the higher level of the moral value orientations of students of teaching programmes compared to students of non-teaching programmes. We consider this to be positive in relation to the profession for which students are preparing. Their educational work will include helping students integrate values into their lives. On the other hand, we realize that no student comes to school as a tabula rasa; they are influenced by socialization in the family or other influences, so the teacher's work in this direction is not the only one. We consider it all the more important that teachers not only teach values, but that they are an inner part of their personality.

The research did not show significant differences in the level of moral value orientation by age, gender, university and year of study.

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APPLYING AUTOMATION IN SLOVAK TOURISM INDUSTRY – BENEFITS AND ISSUES

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Abstract: This research paper is devoted to analysis of the problematic aspects of tourism sector development in Slovak economy in terms of the robotics and automation issues being affected by Industry 4.0 concept implementation and find out their consequences. The main objective of the research is to estimate the impact of robotics, automation and digitalization within Slovak tourism business that might affect the new job creation and job disposal along with the labor force adaptability to it. The way how robotics is being implemented in hotel business, the particular example is to be illustrated on the Hotel Elizabeth in Trenčín, Slovakia by means of the structured interview as the principal scientific method, the hotel managers were inquired by. Further analysis is provided on a database of Eurostat, Ministry of Economy of Slovak Republic, UNWTO and OECD. The results have shown that automation and robotics of activities in hotel business can help tourism industry improve its performance also contribute to productivity.

Keywords: Slovak tourism sector, Industry 4.0, new technologies implementation, automatics, robotics, sustainable jobs creation, hotel business.

1 Introduction

Lipkova, Hovorkova (2018) and Saroch (2015) indicate that the development of information technology has changed the way people search, buy and consume products and services. Automation and digitization are currently experiencing their greatest boom. They change the functioning of not only industry and production, services, but also the whole society. Today, machines are able to produce a required product independently according to specified parameters, they recognize when they need to be fixed, to stop their operation when there is a danger ahead (Svarc, Grmelova, 2015; Tajtakova, Zak, Filo, 2019). Mura, Haviernikova, Machova (2017) and Zemanova, Drulakova (2016) assert that with the start of robotics and digitization, changes on labor market and possible increases in risks, such as increased unemployment linked to job cuts, are expected. In case of being fired, with no job currently, this period of unemployment can be overcome by the new modern trend, especially in the tourism sector - a shared economy. Logically, more jobs should be lost than those being created. Generally speaking, individual sectors being dependent on internet, artificial intelligence and new technologies are experiencing economic and social transformation. Saroch, Smejkal (2018) and Okreglicka, et al. (2017) concede that with the start of Industry 4.0, labor productivity will increase, but problems on labor market might emerge; the less-skilled workforce will become the most vulnerable.

This paper will draw attention to the employers' problems related to the insufficient number of labor force in tourism sector and hotel business, its possible replacement by automation and robotic technology will be analyzed. Specifically, it is all about the issue to explore the possibilities in what way the Industry 4.0 will influence the labor market in tourism sector in Slovakia and we will try to find out how these jobs being created within the Industry 4.0 implementation could be used in tourism sector. Therefore, the main goal of the research, presented in the presented paper, is to reveal and estimate the effect of automation and robotics implemented in Slovak tourism sector on Slovak economy and labor market. Within the stated objective the outline of the paper is as follows. Based on the literature review the issues of robotics implementation in Slovak tourism industry and automation and digitalization in tourism versus job creation/disposal in Slovak economy will be analyzed and followed by the discussion on the potential changes within

the labor market in Slovak Republic due to robotics, automation and digitalization being implemented in tourism.

2 Theoretical Background and Literature Review

Many authors such as Krecková, Zadrzilová, Rezanková (2016), Sejkora, Sankot (2017), Machkova, Sato (2017) and Zagata, Lostak, Swain (2019) rank the following factors as benefits of Industry 4.0: higher competitiveness; cost minimization, low stock levels; economy efficiency, flexibility and production increase, personalized products; elimination of errors, wastage and delay; reduced production time, efficiency; variation in control; flexible responses to demand fluctuations; profitability, benefits of mass production; security-protected sensors and immediate response capability; renewable energy sources usage; process optimization; quality improvement; reducing waste; ability to intervene more quickly in case of production problems; paper documents digitization; better maintenance; real-time monitoring; better working conditions and sustainability; increased protection in case of accidents, rapid detection of dangerous substances; better communication and cooperation opportunities; focus on ergonomics and ecology; usage in building maintenance and facility management, etc.

In addition, Dudáš, Grančay (2019) and Bolotov, Tauser (2015) ponder that in a risky and highly hazardous work environment, Industry 4.0 has the potential to significantly improve the health and safety of workers, as well as the supply chain control. Authors such as Sadilek, Zadrzilova (2015) and Sauer, Hadrabova, Kreuz (2018) highlight the Industry risky factors being associated with terrorism, hacking attacks, IT security costs as well as data security issues have been significantly increased by the integration of new systems and bigger access to these systems. Hnat, Sankot (2019) and Saroch, Famfule (2016) point out on the problems of achieving and keeping a high degree of reliability and stability of communication - data security, protection of sensitive information and business secrets - protection against viruses and early detection of their penetration. Authors like Tupa, Vojtovic (2018) and Tauser, Zambersky, Cajka (2013) contend that, the risk within Industry 4.0 lies in the production process integrity due to less human control; the loss of high-paid jobs; systematic lack of experience and manpower to build and implement these systems; the necessary encryption, firewall protection, automatic scanning; prerequisite for spending increase in virtual reality and augmented reality; investments in education, research, development and infrastructure; investments to create a favorable business climate and so on.

According to Krajnakova, Jegelaviciute, Navickas (2018) and Miklosik, Kuchta, Zak (2018) the specific characteristics of tourism services often present a constraint or a problem that can be served as a stepping stone to enhance the value of a product through innovation. There can be identified three factors that determine the level and pace of tourism innovation. The first factor is presented by determinants related to supply or suppliers – the supply factors. Fojtíková (2018) and Jirankova (2012) argue that new technologies have led to the development of new capabilities, materials, new services and new forms of organizations. Cihelkova, et al. (2020), Kreckova, Odehnalova, Reardon (2012) and Jašková (2019) agree that this has been particularly true in the last two decades, where technological innovation has played a key role. In the field of tourism, technology has brought a new form of business called "e-tourism", which is today the most successful form of "e-commerce". This event created the need for new tourism management capabilities (e-marketing). New guest information services (e.g. databases) and new forms of network organization, in particular marketing cooperation, have emerged when using new technologies (Nevima, Tureckova, Varadzin, 2018; Cajka, Kral, Tauser, 2015; Daňo, Lesáková, 2018).

However, there were also changes on the demand side not only on the supply side. De Castro, Vlčková, Hnát (2017) and Mura, Ključnikov (2018) ponder that social progress in the field of work, population pyramid, individualization and increased demand for quality have changed the behavior of tourists and people sparing their free time. The new lifestyle has been created by changing working hours, higher incomes, increasing leisure time and the value of holidays, being now considered an important part of life. Accuracy, responsibility, comfort / convenience, speed and price are the key drivers of quality service. The aesthetic aspect, personal attention and choice are secondary and are considered "added features". Anyway, they help create a special "value for money" for the customer (Miklosik, Evans, et al. 2019; Grmelova 2018a). Customer orientation plays an important role in service innovation. According to Hnat, Stuchlikova (2014) and Haviernikova, Klucka (2019) valuable information can be obtained from the behavior of a customer who is closely involved in the production of tourism services. Companies need to be prepared to adapt to changing interests and values of their guests. Helisek (2015) and Maitah, Smutka (2019) note that the most successful new products offer special and unique value, based on innovations that take into account the interests and needs of a client. Such innovations lead to bigger market share, increase efficiency and facilitate the achievement of objectives (turnover, profit).

As a third factor determining the level and rate of innovation in tourism is called competition. Many tourism sectors, including airlines, transport, hotel chains, tour operators, car renters, are highly concentrated and act as global players in the industry. Grmelova (2018b) and Sauer, Kolinsky, Prasek (2019) claim that as the market grows, further technological advances in information technologies can turn normal competition into distorting competition. Ivanová, Masárová (2018) and Krajnakova, Vojtovic (2017) agree that globalization and deregulation have led to further intensification of competition. As in other areas of economic activity that support process innovations (networking, reservation and revenue management systems, etc.) rather than product innovations, it is too easy to imitate a competitor.

According to Mura (2019) and Krnacova, Drabik (2018) the priority role of tourism satellite account indicator is not only to determine the share of tourism in gross domestic product, but also its compilation provides a number of other detailed information indicating the development of this sector. It allows a detailed analysis of tourism demand and supply and an assessment of the overall benefit for the country's economy. Authors such as Hanulakova, Dano, Drabik (2019) and Helisek (2018) are also convinced of the growing significance of tourism to world economy as well as the development of new jobs, ranking the tourism industry among the most important sectors in international economics. Many authors such as Miklosik, Kuchta, et al. (2019) and Jirankova, et al. (2015) argue that important indicators of tourism are mainly the impact on the balance of payments of a country, the development of employment, including the possibility of creating new jobs, as well as the positive impact on economic and social development of particular regions.

Harakařova (2018) and Sejkora (2014) argue that the current world of tourism is characterized by globalization. An important accompanying factor of this globalization is the growth of tourist experience. Traveling at the end of the 20th century was stimulated by the growth of welfare, leisure and the use of vacation for several times in a year. According to Simionescu, Bilan, Streimikiene (2019) and Haviernikova, Ivanova (2018) today's tourist is more keen on traveling and much more experienced, but also more demanding on the quality and structure of the services provided. As a result of globalization and the industrial revolution of the 20th century, the requirements for the implementation of new and innovative products and regions have also increased in order to be able to compete on tourism market (Zagata, Hrabak, Lostak, 2020; Toth, Maitah, Maitah, 2019; Zemanova, 2015). Globalization is characterized by the emergence of multinational companies

(airlines, hotel, restaurant, etc.), which have expanded their business beyond their national borders in order to "break through" on other world markets. This process is called internationalization. Authors such as Gärtner, Sadílek, Zadražilová (2017) and Hanulakova, Dano (2018) concur that the interconnection of air carriers and hotel companies has also made it possible to involve new destinations or regions in tourism, causing changes within the markets. Tourism in the world has to cope with certain developments related to the development of society and the economy. The needs and wishes of visitors are changing more and more (Zemanova, Drulakova, 2020; Fojtikova, Stanickova, 2017).

Authors such as Nenckova, Pecakova, Sauer (2020) and Cihelkova, Nguyen (2018) concur in the idea that the principles of sustainability apply to the environmental, economic and socio-cultural aspects of tourism development and an appropriate balance must be struck between the three dimensions in order to ensure their long-term sustainability:

- the optimal use of environmental resources, which are a key element in the development of tourism, adherence to basic ecological processes and assistance in the protection of natural heritage and biodiversity (Cernohlavkova, et al. 2013; Jirankova, Hnat, 2012);
- to respect the socio-cultural authenticity of host communities, protect their building up and living cultural heritage, traditional values and contribute to intercultural understanding and tolerance (Varadzin, 2016; Drabik, Zamecnik, 2016);
- to ensure effective long-term economic operations that provide socio-economic benefits to all stakeholders, are fairly distributed including stable employment and income opportunities, social services for host communities and are contributing to poverty reduction (Boukalova, Kolarova, Lostak, 2016).

Sustainable tourism development requires informed participation by all stakeholders as well as strong political awareness to ensure broad participation and consensus building. To achieve the sustainable tourism is a continuous process and requires constant monitoring of impacts and implementation of necessary preventive or corrective measures whenever necessary. Tourism should keep a high level of tourist satisfaction, ensure a meaningful experience for tourists, raise their awareness of sustainability and promote the sustainability described in the field of tourism (Lipkova, 2017; Sadílek, Zadrzilova, 2016; Lipkova, Gress, Poncarova, 2017).

3 The Goal and Research Methodology

The research task is focused on the analysis of the problematic aspects of tourism sector development in Slovak economy in terms of the robotics and automation issues affected by Industry 4.0 elements implementation and find out their consequences. The research will be focused on exploring the Slovak tourism industry analyses and the further development under the Industry 4.0 conditions.

To put in other words, the main goal of this paper is by means of analysis, comparative analysis methods followed by logical deduction to figure out the potential benefits for Slovak national economy development coming out of Industry 4.0 aspects being implemented in Slovak tourism sector. The paper is focused on problematic aspect analyses such as the current status of Slovak tourism environment and possibilities to implement Industry 4.0 technologies like robotics and communication and information technologies into Slovak tourism and hotel industry. The issue is to figure out whether and to what measure the robotics, new technologies might affect the new job creation along with the labor force adaptability to it. For the most objective assessment of the changes being awaited by Slovak tourism industry and hotel business due to the implementation of Industry 4.0, the structured interview method has been chosen as the basic research method the hotel managers were approached by. The way how robotics is being implemented in hotel business, the

particular example is to be illustrated on the Hotel Elizabeth in Trenčín, Slovakia by means of the structured interview as the principal scientific method, the hotel managers were inquired by.

To accomplish this goal, methods such as analysis, comparison, synthesis and logical deduction are to be used. Subsequently the analysis will lead to synthesis and prognosis by means of abstraction method eliminating the less important factors in order to set general statements and opinions. Data and for the analysis are withdrawn from the respected and reliable institutions such as EUROSTAT, Hotels and Restaurants Association of Slovak Republic (ZHR SR), Ministry of Economy of Slovak Republic, Slovak Statistical Office, ILO - International Labor Organization and IATA - International Air Transport Association. Annually published reports on competitiveness by organizations such as the UNWTO and OECD have achieved high recognition from the governments of countries being evaluated as well as businesses, and therefore they are considered as authoritative sources in this field.

4 Results and Findings

This section is devoted to the analysis of issues regarding the robotics implementation in Slovak tourism industry and automation as well as the digitalization in tourism versus new jobs creation and declining jobs disposal in Slovak economy.

4.1 Robotics implementation in Slovak tourism industry

One of the Trenčín hotels has recently "employed" the first robot in Slovakia. It works at the reception as the first robot on a Slovak hotel scene. Artificial, shiny white humanoid helps guests at the Elizabeth Hotel in Trenčín with orientation. The Heritage Hotels of Europe hotel organization, the Hotel Elizabeth in Trenčín belongs to, does not want to release people in the future, but robots should relieve hotel staff from routine administration. The robot is one-meter-high, weighs 28 kilograms and is called Marko. The robot with a display on its chest moves its head, shoulders, elbows, wrist, five fingers and knee and is currently tirelessly skating around the reception in Elizabeth Hotel in Trenčín. It is not as fast as the staff is, is able to move by three kilometers per hour, but it still helps employees. The Marko robot is social and constantly acquainted with new things and is learning other skills. Its task is to advise guests with minor questions. Guests can get a piece of advice on how to navigate within the hotel, it offers tourist advice and information about the location or services of the hotel. The Robot speaks English but learns Slovak and even dances when necessary. In the future the robot should also be able to accommodate guests. According to the Elizabeth Hotel manager, the robot speaks English, it should be able to speak Slovak and other languages by the half of the year of 2021; in addition, it is incorporated by four microphones, two HD cameras, a 3D sensor, touch sensors especially on hands and feet and three buffer sensors. Heritage Hotels of Europe chain is one of the leading innovators in hotel business. Since January 2019, it has been receiving bitcoins in all its facilities and is also preparing for opening the doors by cellphones instead of cardkeys. Charging stations for electric cars are being built by the hotels. About half a milliard EUR will be invested into the improvement of rooms interior, technology, but also staff training. Soon guests will be able to open rooms not using keys but smart phones.

The international hotel chain Heritage Hotels of Europe will deploy the recently introduced robot to all its hotels in Hungary, Austria, Italy, Croatia, Slovenia. The Elizabeth Trenčín Hotel in Slovakia was the first within this chain where the robot was implemented. In addition to consulting the services to guests, the robot will hand over the mobile key to guests to open their room. When a group of tourists from abroad passes by, the robot turns their head towards them, gestures with a hand, and calls "Be my friend" for a conversation and will be also entrusted with the check-in service area. The robot was made in France and is supported by Adastr Inc. It does not know how to learn; it is necessary to program it. Any robot cannot replace human empathy and emotions. Today, however, hotel staff does a lot of

transactional tasks that can be replaced by artificial intelligence. The robot can save time for staff on guests to be able to provide a more personalized experience. According to the director of Elizabeth Hotel in Trenčín, for the hospitality segment robots will present a similar revolution to the Internet as some 20 years ago when the first website was created. Meanwhile, the robot Marko is able to give an advice on restaurants in the city or hotel services and some of the guests take it as an element of amusement; they take selfie; have jokes or dance with it.

4.2 Automation and digitalization in tourism versus job creation/disposal in Slovak economy

An example how automation and digitalization can make work more effective the trivago.com platform could be picked up, which provides the accommodation facilities of several companies, among which the client can choose the product according to his/her preferences. As more and more people book their trips online, companies need to adapt to this new reservation systems opportunities. Otherwise, for instance a hotel might not have reached its targets for the number of services or airline sold the desired number of flight tickets. It is obvious that different target groups prefer different ways to book a trip. For consumers, there are currently different ways of booking a hotel, while before digitization there was only one option: travel through travel agencies or travel companies. Online guides offer several benefits: simple updates, links to specific information, searching features, feedback or reviews from other travelers. Through virtual reality, clients can walk through and see how the famous places like Athens, Rome, or the pyramid of Giza looked like in the past, experience the most famous battles in history, while also making the lesser-known historical places on earth more attractive than those people don't visit as often as the most famous ones. As it can be seen, all this would be new and very attractive for potential visitors - it would contribute to the increase in the number of visitors in these well-known and less well-known regions, which would lead to the need to increase the number of new tourism facilities, also new accommodation facilities, catering facilities, quality infrastructure in the regions would have to be built. Undoubtedly, for these facilities to be operational and able to provide their services, it will be necessary to create new jobs for the staff, cooks, receptionists, guides to the sites and others. At the same time, there will be a need for a new workforce on construction sites, whether hotels, restaurants, new roads (OECD, 2020; IATA, 2020).

The International Labor Organization (ILO) supports the promotion of sustainable and socially responsible tourism and the creation of decent jobs in tourism through: strengthening the links of tourism with related sectors in its supply chain (e.g. agriculture, crafts, transport, infrastructure, construction) along with integrated approach and support for local resources. It can be done by enforcing initiatives to promote job creation at the local level, including in rural areas that contribute to social and economic development and by reducing poverty through social inclusion, regional integration and the expansion of local incomes as well as by investing in the development of skills and vocational education and training and improving working conditions to improve the quality of services in this sector (ILO, 2020).

In fact, no other sector provides employment to such a large part of society. Of particular interest are the types of people who work in these functions. Tourism is usually used by a higher proportion of women. According to the data from UNWTO (2020) and Eurostat (2020) for example, women work in 65% of travel and tourism jobs in Australia and Germany, compared to 45% in other sectors in these countries. Tourism tends to employ young people. About half of all employees in hotels, catering and hospitality are under 25 years old. This is particularly important for an economy in less developed countries where the proportion of young people is much higher. Tourism also provides employment opportunities for people with lower or non-professional education. By its nature, the tourism industry is often labor-intensive because it needs a large number of people

to operate rooms, prepare food and maintain a hotel infrastructure. These are jobs that should be relatively safe from the advancement of technology and artificial intelligence.

Besides the implementation of robotics, automation and digitalization also the demand side of the economy has to be reflected to avoid the negative effects on labor market within the tourism sector. According to the Ministry of Economy of Slovak Republic (2020), the reason for the growth of the whole area of services related to domestic tourism in Slovakia is the implementation of a contribution benefit for employees, which will increase the performance of tourism industry. These are so-called recreational vouchers, which give the employee the opportunity to ask the employer for a recreation allowance. The contribution will be 55 percent of the eligible costs, up to a maximum of EUR 275 per year. This means that if an employee spends EUR 500 or more per year on recreation, the employer will contribute a maximum of EUR 275. If the employee spends a lower amount of recreation, the employer will provide him with an allowance of 55 percent of the eligible expenses. Only companies with more than 49 employees will be obliged to provide this recreation allowance to employees. Only a person who has worked in the company for at least 24 months will be entitled to it. For other employers with 49 employees or less, the option to provide a recreational voucher will be optional. Upon the fact that this recreational voucher can only be used within the Slovak Republic, it is very likely that this will have a positive impact on the contribution of tourism to national economy and employment. Therefore, tourism will be a decisive player in recruiting people who can no longer find employment in industrial sectors.

According to Hotels and Restaurants Association of Slovak Republic - ZHR SR (2020) accommodation and catering services can absorb a huge amount of workforce due to its cross-sectoral nature and influences from other sectors. Reinforcing the employment base in tourism sector was certainly also affected by increased production in other industry sectors within the Slovak economy, which brought additional disposable income to bank accounts of inhabitants, which they could spend on recreation and thus further boost consumption in spa, wellness and other sectors of tourism. Due to the increased number of visitors to accommodation facilities, being according to Eurostat (2020) already 3 774 062 in 2014 and 5 375 475 in 2019, wages and employment motivation increased, resulting in an increasing number of employees in tourism sector. It is assumed that the performance of accommodation and catering facilities will continue to increase and so tourism will continue to absorb labor that will not find its place in primary and secondary economic sectors.

The findings have revealed that accommodation and catering activities employ a significantly higher number of people each year in Slovak Republic; more than ten percent, or more than seven, is definitely not a negligible figure. It is clear that a part of the workforce from the manufacturing industries, being no longer to be employed due to the mechanization, was transferred into the tourism sector, where additional added value in the production of recreational services is created. This issue is also reflected by a minimum increase in employment in industry, by only 1.9% on year-on-year bases. Another evidence is the gradual increase of average wages in tourism sector, which, although not nearly the same as in industry sectors, have increased by almost 20% during the period of 2014 and 2019 (Slovak Statistical Office, 2020). Even though wages are still at a relatively low level in tourism sector, it is assumed that they will be increased proportionately at the same rate of economic growth.

5 Discussion

When it comes to the potential changes within the labor market in Slovak Republic due to robotics in tourism, the labor market in the field of tourism is very closely related to the human factor. Direct contact with employees in tourism industry is very common. Even though digitization and robotics may be seemed

to affect this area only partially, it will not affect labor market changes in this area so much. As mentioned above, the concept of Industry 4.0 extends beyond the manufacturing area. These areas are most often mentioned. Only very few people realize that there is also a slow change in tourism. It is obvious that the area of accommodation facilities is a specific area of tourism, as it is the area from which the essence of travel is based. The impact of Industry 4.0 on accommodation, namely the hotel business and jobs in such establishments, is an area that is also affected by robotics and digitization. Suffice it to say that in Slovakia we do not see such big changes in this area of tourism as in Japan, where there are already hotels without employees. Hotel services are characterized by personal approach of staff. Some hotel clients explicitly want accommodation, where they will be taken care of, and staff will notice them. In hotel business, in some period of time there will be some changes under the influence of Industrial Revolution 4.0, but personal contact as a whole will never be erased and, if so, probably only in large hotels. However, there are always individuals who specialize in personal contact with the customer.

It is evident that within large hotels there is more diversification of jobs than in smaller ones. This means they have their own booking department, sales department, marketing department, many people at the front desk. Each block has its own manager, and of course there is a hotel manager. Management as an important work control area is one area that doesn't need to be afraid of being replaced by robotics. Also, automation is not expected in sales or personnel departments as these job positions require qualified and skilled staff. Human resources managers are not in danger of being replaced by robots. However, ordinary employees can be easily replaced. The impact of Industry 4.0 on hotel executives may be an increase in knowledge and knowledge requirements in the field of information technology. Chambermaids appear to be a specific kind of job in terms of accommodation services. If a guest does not meet them in hotel corridor, they do not come into direct contact with the guests, even though the share of this job on hotel operation is very high and substantial (ILO, 2020; OECD, 2020; IATA, 2020). Nowadays it can be seen the trend of so-called robotic vacuum cleaners, that can vacuum the room where they orient themselves by means of sensors. There are companies, that have already developed robots to replace the classic housekeepers. This robot can vacuum, wash, clean up hotel corridors, and is used in airports as well as hotels. Generally speaking, we can say that we do not have to expect a complete dissolution of such a job yet, but over some time it would be possible.

Undoubtedly, the area of catering services is characterized by a strong personal relationship with the customer and therefore it is not assumed that automation could dominate in restaurants, bars and thus replace human labor. Kitchen workers also have a very important position. Despite all these preconditions, it is precisely them who may be threatened and being replaced by artificial intelligence. Nowadays, the use of robotic helpers in restaurants is increasing. This will facilitate a part of the production process. For example, automated machines can completely prepare pizza. Since 2013, there are the first pizza machines that can create pizza in 3 minutes. In Slovakia, such vending machines can be found in shopping malls in Bratislava. This kind of automation and robotics is suitable for fast-food types of restaurants and pizzerias (ZH SR, 2020). We can notice that Industry 4.0 can significantly affect the number of jobs in restaurants. This concerns rather the fast food restaurants, where the emphasis is on speed and not on comfort. For classic restaurants and especially luxury restaurants, we can assume that a personal contact will always come first. Only the jobs like cook assistant may be at risk where automation could help cooks, for example, in preparation of vegetables. Currently, in the field of catering a big variety of smart technologies is in usage. These are, for example, Bluetooth sensors that allow automatic temperature adjustment for food. This technology, which keeps the necessary temperature for particular food and significantly reduces the possibility that the food will go wrong. Furthermore, more and more tablets are used as menus; by means of tablet we can order

food, by mobile applications we can make reservations in restaurants from home, and so on.

It can be assumed that the synergy of tourism industry in Slovak Republic along with the modernization of manufacturing industry within the new jobs creation lies mainly in the creation of higher added value issue, which will have a positive impact on the level of disposable income. For citizens, higher incomes and more money will mean that they will be able to afford even more luxurious goods and services for which they could not spend enough money before. Among these goods and services, we can also include tourism, which, like automated production, belongs to knowledge-intensive production with high added value. Increased demand for accommodation and catering services is expected after the improvement of financial situation of Slovaks, which will lead to the creation of new jobs. If we include the multiplier effect of tourism industry and its cross-sectional nature, which helps to further increase consumption and therefore also production, we get further and further additional growth in disposable income. In this way, the synergy effect will be met when the final effect is higher due to the merger of two sectors, which on its own could produce a certain value, but together they multiply and valorize these phenomena in the long term.

To put it in other words, the synergies of the two sectors, when fully involved, will be rapidly proved at several levels. One of them is balancing and reducing regional disparities by creating new jobs of higher local GDP. As the least developed districts in Slovakia having the biggest natural environment potential are chronically known for their underdeveloped infrastructure, which discourages industrial investors from entering the regions, they cannot rely on production to reduce unemployment. But what they can do, for example, is to facilitate the emergence of tourism facilities that are not so much dependent on infrastructure and thus employ their own inhabitants. In developed Slovak regions with industry and where incomes are accumulated, the demand for recreation and discovering new experiences beyond the main destinations will be met. As consumption increases with increased supply, combined with sufficient incomes, the effect on economic growth in the least developed regions would increase at an exponential rate in this case.

6 Conclusion and Further Directions

Considering the research results, it can be concluded that the benefit of digitization is also to make passengers aware of new destinations less known in the past. In these destinations, national economies can grow, new jobs can be created, which can effectively reduce, for example, unemployment in developing countries and thus increase the socio-economic development of world economy on a global scale. Finally, we can summarize that automation and robotics of activities in hotel business can help tourism industry improve performance by reducing errors and improving quality and speed, and in some cases delivering results that go beyond human capabilities. Automation and robotics also contribute to productivity. At a time of low productivity growth, this would provide the necessary stimulus for economic growth and prosperity in Slovak economy as well as it would also help offset the impact of declining working age population. To broaden this topic, the further research will continue with exploring the role of Industry 4.0 and its impact on tourism sector development within the world economy development particularly in the U.S. and EU economies.

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ELEMENTS OF RELATIONAL AGGRESSION IN PRE-SCHOOL GROUPS IN SLOVAK KINDERGARTENS

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The study presents an analysis of findings from a long-term research supported by the VEGA agency 1/0452/18. Identifications, analyses, inhibitions of latently aggressive children's actions in pre-school period.

Abstract: The study analyses specific situations from the environment of Slovak kindergartens, which demonstrate the covert nature of aggressors in pre-school age. The analyses of situation observations were supplemented by and compared with the outcomes of individual interviews with the observed children. Based on these data, sociometry matrixes were constructed, which also included the individual's sociometric index expressing their acceptance and/or rejection by the peer social group. Based on these analyses it was confirmed that in the beginning of the aggressive actions, aggressors combine direct and indirect aggression unless they gain capabilities to act with covert aggression. Aggressors (pre-schoolers) are primarily characterised by a lower level of secrecy in covertly aggressive behaviour.

Keywords: covertly aggressive behaviour, kindergarten, sociometry

1 "Ideal age" for covert and relational aggressive behaviour

The first study concerning covert aggression (Crick et al., 1998) questions if it is correct to be considering covert aggression at an early age. According to the research results, the existence/prevalence of covert aggression in children younger than 2.5 years was not fully confirmed. Crick et al. (2002) claimed that the occurrence of covert aggression in early childhood (with the extension to pre-school age) relates to lower level of mutual acceptance (negative preferences) and higher tendency of the social group to reject their peers, friends, basically, one of their own. Huesmann (1988 as cited in Lovaš, 2010) described the theory of scenarios as a model of processing information, which he used to clarify the development of habitual aggression in children. He stated that children at an early age create aggressive scenarios based on their own experience and learning by observing their surroundings resulting in "a network of cognitive scenarios of aggressive behaviour in specific situations. To activate a scenario a trigger is enough, followed by creating conditions that can evoke the situation" (Lovaš, pp. 37-38). Similarly, Ribeiro and Zachrisson (2019) observed that exposure to peer aggression or externalizing behaviour may increase individual physical aggression. The research results of Monks et al. (2005) suggest that pre-school age is the ideal period for performing covert aggression. Verlaan and Turmel (2010) confirmed that this form of aggressive behaviour in the described age is nothing unusual. It practically appears in every peer group and is initially considered common behaviour. The extent to which this form of behaviour is accepted by the social group depends on the limits of how bearable the harmful behaviour is. In the research of Yekतालab et al. (2015) relational aggression was manifested in 22% of pre-school children (to compare, verbal aggression was present in 33% and physical aggression in 31% of children).

Covert aggression in an early and pre-school age reflects wider psycho-social problems in early childhood. Krygsman and Vaillancourt (2019) found out that children who experience and engage in relational aggression in pre-school age are at risk of depressive symptoms too. Ostrov (2013) claims that peer rejection of a child relates to a variable scale of social and psychological problems following on children's early development in their immediate environment (family). Pre-school classrooms are diverse and in order to be inclusive for everyone, these factors need to be considered. Therefore, it is useful to understand covert aggression as a result of adverse conditions in the child development but also as a factor that can be regulated if it is observed and supported by appropriate strategies. The focus of this study is on observing the dynamics of small social groups with the purpose of deeper understanding of the phenomenon of covert aggression and its influence on inclusion or exclusion of children from their peer groups. Kováčová (2014) reported that within pre-school age, children with and without disability might be at risk. Children who differ from the peer group in their behaviour become potential victim. Research proves that children with pervasive developmental disorders (Kožík Lehotayová, 2017a), learning disability, or gifted individuals (Kožík Lehotayová, 2017b) are vulnerable too. Thus, for creating inclusive education environments, it is crucial to identify covertly aggressive behaviour in pre-school peer groups.

2 Having a friend is a need of pre-school aged children

From the age of three, it becomes important to children to have a friend, somebody who they can feel good with, somebody to play with, somebody who shares something with them. According establishing relationships essentially means activating communication pathways in the processes of mutual respect and understanding. Distance between friends is substituted by respect and destigmatisation of all participants. Comstock-Galagan (2008) claims that everyone needs friendship despite the fact that some do not realise the need to have a friend.

Social relationships are created between individuals and their social environment through mutual influence of complex interaction processes. Described interactions happen on three levels. Kollárik (2002) identifies the mechanism of deviations in human behaviour from social norms as happening in the level of: the process of socialisation of the individual; mutual influence between the individual and the social group and relationships between the individual and the society.

Behaviour of the individual is an expression of their personality and their relationship with the external environment. Tichá (2008) claims that understanding individuals' behaviour assumes respecting mutual interplay of the factors that influence it, which are the individuals, their family, school and society.

Kindergarten, as identified by Kováčová (2019), presents one of the first opportunities for developing friendships and relationships, which may have an impact beyond the school environment. Social interaction as part of friendships, acquaintances or short-term meetings is understood by Walden et al. (1999) not only as one of the indicators of a successful process of inclusion but also as its means. It applies in particular to pre-school age, where the capacity to social interaction with peers is an important stage of development, while the interaction represents the interpersonal context of social, speech and cognitive development. According to Dunn (1993) friendships are characterised by the fact that friends do not betray each other in the social group by jokes or gossip. This loyalty towards friends is strengthened by intimacy and closeness. An example is a published study about friendships, in which Maquire and Dunn (1997) point out the presence of covert aggression in children's actions, e.g. "I don't like X, you

neither?” Creating conflicts, gossiping without a real reason, or untruthful information suggest that children in pre-school age use covert aggression initially to strengthen their position, and later with the intention to isolate the “undesirable” friend on purpose. “*Friendships are a commodity*,” as Comstock-Galagan (2008, p. 4) wrote. Strong friendships overlook so called *labels and stigmas*.

Covert aggression is on one hand more visible, however, in the end it is the one that damages relationships and weakens child’s reputation. Putallaz and Gottman (1981, p. 167) confirmed that “*children start with gossiping and creating untruthful information at the age of three to four years old.*” For illustration, they mention a conversation of a couple of children who are talking rather loudly about a third child in the context of not being near them during the play: “*It will be best if he leaves us alone.*”

The connection between friendship and using covertly aggressive strategies was reflected in the research studies of multiple authors. The results comprise findings that friendships and popularity are primary aspects of social contacts in child development. Children in pre-school age consider them crucial for their own existence in the social group. The concept of friendship is expressed in a specific, intensive, affective dyadic relationship between two children, while the concept of popularity is defined by how the child is perceived by the whole group. These two concepts complement each other a for relationships of children at pre-school age they are significant and necessary in friendship building (more in Ostrov & Crick, 2005). Children who use covert strategies with an aggressive intent in their acts have at least one reciprocal friendly relationship, as stated by Rys and Bear (1997). Lee (2020) explored the roles children take in their relationships and confirmed that children in the roles of bullies were most dominant in terms of group dynamics. In popularity, they were behind children in neutral role who had the most positive relationships. However, only 10% of children kept the role of the bully long-term and their role changed due to a change of dominance rather than change in relationships. Moreover, relational aggression tends to be associated with social maladjustment (Ostrov et al., 2019). Gower (2014) provided evidence that physically aggressive behaviour in pre-schools predicted reduced peer acceptance. It was confirmed by Evans et al. (2019) that all types of aggressive behaviour, and especially physical and reactive aggression link with peer rejection. Ostrov et al. (2019) emphasised that relational aggression (not bullying) increased the risk of peer harassment or relational victimisation.

2.1 Covertly aggressive behaviour in the development of children at pre-school and primary school age

The aspect of latency is different in the development of children/pupils in pre-school and in primary school age (Table 1).

Table 1: Comparison of manifestations of covertly aggressive behaviour in selected age periods

Manifestations of covertly aggressive conduct	Developmental period	
	Pre-school age	Primary school age
Beginnings of covertly aggressive conduct	Conducted directly (primarily verbally)	Conducted discretely, by the means of another child
Aggressor’s behaviour	Aggressor does not feel the need to hide. Rigby (2001) states that a “lower” level of covertness is typical in latently aggressive behaviour for a child at a pre-school age.	Aggressor’s behaviour is more elaborated and hidden
Specification of aggressor’s attacks against the victim	Direct attacks (gossip, argumentation without a truthful basis)	Indirect attacks (threatening of reputation, intentional destructive information)

The aggressor’s behavior is characterized by direct and indirect attacks of the aggressor against the victim (Archer & Coyne, 2005).

If we compare the latency rate at primary school age, we can state that aggressors have appropriate competences to act in a covertly aggressive way and their strategies are usually well thought out. They can influence social group members while managing the whole process of covert aggression. Usually, children who began with aggression in pre-school age will elaborate their actions as they develop and continue with covert aggression if there are conditions created to do so (see Ostrov et al., 2004).

3 Analysis of findings from observations in kindergartens

Subsequently, we present situations in which aggressive behaviour with elements of latency can be observed in pre-school aggressors. Individual situations were part of observations in Slovak kindergartens during the months May 2018 to February 2019. Children were monitored in natural situations (during both free and directed play).

For the assessment of individual situations, we used observation and subsequently individual interviews with children who were participating. For the sake of objectivity, we conducted interviews on that day to minimise distortion of the results as such. We used the sociometric method (Janoušek, 1986) to ascertain relationships within a group, its structure and the position of individuals within it.

The limit of this method is the fact that it does not provide information on the causes of these relationships and the status of individuals in the group. Despite this limit, it was possible to compare the analyses of observations with the sociometric index values (AP, RP). These were numerical expressions of choices made, focusing mainly on monitoring the cohesion, expansion of the group, etc. Choices made by group members may be unidirectional if one person (or group) selects another without being selected by them; bidirectional if two persons select each other. A case of no selection is possible too when individuals did not select each other from either side.

Sociometric indexes provided information on the situation in the group, which is an important piece of information in assessing covert aggressive behaviour (compare with Kollárik, Solárová, 2004; Kollárik, 2002).

3.1 Situation K

Daniel (3 years) approached two boys from the back who played with building blocks. He arrived at the construction and kicked it. After kicking it he skipped away with a smile. After a while he returned to the boys (Kamil and Milan), who were repairing the demolished construction.

He wanted to demolish it again. One of the boys (Kamil) prevented him from demolishing the building again by stretching his hand out. Daniel stands, the boys sit and wait. Daniel frowns, tries to kick again, but Kamil’s hand still prevents him from kicking the building blocks. Daniel turns to go to another group of children (Matej, Uli, Sergei, Tony). Daniel sits down and joins a game with building blocks. After a very short time, he is pushed out of the group by one child (Matej) with a commentary: *You are bad, we will not play with you! Go away!*

Evaluation of Situation K from the perspective of the participants: During the individual interviews we explored the types of mutual relationships based on the situation that occurred. Individual children evaluated the play and also the mutual relations between each other. Each of them had the opportunity to comment on each child, but of course they did not have to use the choice.

Table 2: Sociometric matrix of situation K

Participants making choices	Participants	Participants being selected in play							Number of made choices		Sociometric index	
		Daniel	Kamil	Milan	Matej	Uli	Sergej	Tony	+	-	AP	RP
Daniel	0	+	+	+	+	+	+	6		0.16	0.83	
Kamil	-	0	(+)	+	-		+	3	2	0.66	0.16	
Milan	-	(+)	0	+			+	2	2	0.5	0	
Matej	-	+	(+)	0			(+)	3	1	1	0	
Uli	+	-		+	0	+	+	4	1	0.16	0.33	
Sergej	-			(+)			0	1	1	0.66	0	
Tony	-	(+)		+	-			0	2	2	0.5	0.16
								21	9			

Key (Table 2):

AP / acceptance of a person [AP = number of people who made a choice / (N-1)]

RP / rejection of a person [RP = number of people who reject a person / (N-1)]

When interpreting the rating, it is necessary to have the knowledge that a person, a member of the group, can obtain a rating from a minimum value of 0 to a maximum value of 1. The higher the AP value a person gained, the more accepted they are by the group. The higher the value in the DP index, the more a person is rejected by their social group.

The observation was carried out in the "Horses" class. It was a heterogeneous class in which children aged three to five years old were included. This grouping was a temporary solution, as the current kindergarten is undergoing reconstruction of the class due to the emergency situation that had to be addressed during the school year.

Based on the achieved sociometric index value in the context of individual acceptance of the person from the side of the group participants, it can be stated that Milan, Matej and Tony achieved a higher AP value, which shows that they are the most accepted by the group. Matej reached the highest AP (= 1), indicating that he is a favourite person in this particular social group.

In the case of a value achieved in the context of rejection of a person by individual participants in the group, it can be stated that Daniel achieved the highest AP value (= 0.83). Based on the specific values, it is clear that Daniel is accepted by the group, but at a very low level. The likelihood of being excluded from the group in group play is more than likely.

Most children rated the play as good, interesting until Daniel came. Children realize that Daniel is younger, but from their point of view ... *he can't do bad things just because he is small, ... no one is doing bad stuff to him, so he can't do bad things.* On the contrary, Daniel considered his own behaviour as play that did not harm anyone.

After 5 months: Daniel repeats his unsuccessful conduct (based on his experience from the "Horses" class) in another social group. There is Tobias in this group, who likes Daniel. Tobias is impressed by Daniel and admires him (... *he is as powerful as a dragon*). According to the observations of the teacher, Tobias wants Daniel to like him. He uses this fact in particular to strengthen his position during group games.

Table 3: Transcript of the interview of the aggressor with a mediator

Daniel	<i>Go there, see if they have room, that I am going to play. Daniel points to Tobias where to go to ask.</i>
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Tobias	He came to the children and asked them. Children are discussing with Tobias, then they nod. Tobias comes to Daniel. <i>Yes, we are going there.</i>
Daniel	Approaches the children and sits down on the carpet.
Jonáš	Jonáš leans down towards Daniels and says: <i>Borrow this car, this one you can, but until Peřko comes.</i>
Daniel	Daniel nods and tells Jonáš: <i>Peřko is a bad boy, he is naughty, also to me and Tobias.</i> He points at Tobias.
Tobias	Stays quiet, does not react.
Peřko	Peřko comes to children playing together. He wants to sit down with them, but Tobias stops him with stretching his hand and says: <i>Go away, you are bad, you were naughty to us!</i> Peřko tries to defend himself, but he is pushed out by Tobias.
Tobias	Tobias controls what Peřko is doing. Then he stands up and approaches Daniel. <i>We are playing. He is gone now.</i>
Daniel	Daniel lifts his head and gives thumbs up and says: <i>Great. Cool.</i>

Source: processed based on observation (February 2019)

Based on his previous experience, Daniel tried to strengthen his position. He used the unexpected loyalty of Tobias, whom he used as a mediator. On the basis of false information, he secured a spot during the game and at the same time used a replica that was addressed to him in another situation and in another group. Pre-school aggressors learn. They are aware that physical aggression is threatening because it requires force that children often do not have as potential aggressors. For this reason, they behave manipulatively towards the social group in their own favour.

Each individual is tied to the value and normative system of the social group to which they belong. Some social groups are characterized by a high level of tolerance of violent behaviour, which is considered desirable. If an individual belongs to such a social group, membership in it is important for them and they are comfortable with the group's rules, it can be assumed that they will also show violent manifestations of behaviour, or there is a tendency to strengthen such behaviours.

3.2 Situation M

In the "Butterfly" class, children commonly play chase. They also have rules that, if they break, they must stop chasing. Lukas (4 years) does not participate in the chase. He watches four chasing children (Filip, Tónko, Tamara and Lenka). He walks slowly around the classroom and picks objects from the shelves (he looks at the object, then either chooses it or returns it to the shelf). When he already has three items (two building blocks and a ball) he takes them behind a white shelf, which is part of the kitchen. He puts them all on the carpet. Meanwhile, he watches the chasing children. He takes one more item from the shelf (teddy bear). He hides behind the shelf and throws the first block. He accompanies each throw with a silent laughter covering his mouth with his hand. After throwing the block, he squats and waits behind the shelf. The block hit Filip, who in the heat of the chase, did not notice the thrown block. The second block flies in the direction of Tamara, who is also hit, and she makes a cry. She pauses and looks around. She sees no one and rubs the place where the cube hit her. Lukas laughs behind the shelf and waits. When he hears no sounds, he sticks out and looks into the faces of the angry children. The chasing children gradually find out that someone is throwing objects into them. They agree and divide into two groups. They advance from each side, thus circumventing Lukas. When Lukas does not hear any sounds, he sticks out from behind the shelf and looks into the children's faces. When confronted with him (Filip "interrogates" him), Lukas denies and defends himself: ... *It wasn't me, I wasn't throwing anything, not even a block, nothing ... Mrs. Teacher boys want to beat me ... Mrs. Teacher ... Tamara is angry and encourages the boys to do the "Courtroom" and decide "what we do with the villain."* Lukas defends himself, but Tamara shows

him the wound she got from the block. *Do you want me to throw something at you too? My big brother will come and throw a shelf in you! That one! You want that? He will throw it on you!* The chasing children are angry overall, because Tobias spoiled their chase.

Evaluation of Situation M from the perspective of the participants: During individual interviews with children we explored the types of mutual relationships based on the situations that occurred. Individual children evaluated the play and also the mutual relations between them. Each of them had the opportunity to comment on each child, but of course they did not have to use the choice.

When interpreting a rating, it is necessary to have the knowledge that a person, a member of the group, can obtain a rating from a minimum value of 0 to a maximum value of 1. The higher AP value a person obtains, the more accepted by the group they are. The higher RP index a person gains, the more they are rejected by the social group.

Table 4: Sociometric matrix of Situation M

Participants making choices	Participants	Participants being selected in play					Number of choices made		Sociometric index	
		Filip	Lukas	Tamara	Lenka	Tónko	+	-	AP	RP
Filip	0	-	(+)	(+)	+	3	1	0.75	0.25	
Lukas	-	0	(-)	+	+	0	4	0	1	
Tamara	(+)	(-)	0	(+)	-	2	1	0.5	0.25	
Lenka	(+)	-	(+)	0		4	0	1	0	
Tónko	+	-		+	0	2	1	0.5	0.25	
						11	7			

Key (Table 4):

AP / acceptance of a person [AP = number of people who made a choice / (N - 1)]

RP / rejection of a person [RP = number of people who reject a person / (N - 1)]

Based on the achieved value of the sociometric index in the context of acceptance of a person by individual participants of the group, it can be stated that Filip achieved the highest value of AP (= 1), which proves that he is the most accepted by the group. This also occurs during the interrogation of Lukas, when all children accepted his status. The value achieved indicates that Filip is a favourite person in this particular social group.

In the case of the value achieved in the context of the rejection of a person by the individual participants in the group, it can be stated that Lukas achieved the highest value (RP = 1). It is obvious that Lukas is accepted by the group at a very low level.

The overall behaviour of Lukas during "his own game" can be considered covertly aggressive. His intention to hurt other members of the group was thought through, which was also reflected in the observation of his activity during the chase other children were playing. Hiding behind the shelf itself can be characterised as an *element of latency in aggressive action*. It can be assumed that a certain "rate" of latency at this age is typical of this developmental period.

4 Conclusion

By analysing the results based on the tools used to monitor the issue, we came to the following conclusions. The use of sociometry (sociometric matrix and sociometric index) is a

suitable strategy in assessing individual relationships in the social group of pre-school children. It provides evidence of an effective strategy for assessing peer aggression. It is important especially due to several biases that can occur in teachers' observations of child peer aggression. Huising et al. (2019) recorded differences in teachers' and children's perceptions of victimisation. Whereas children said that boys and girls were equally victimised by both boys and girls, teachers thought same sex victimisation was more frequent. In a similar research, Lindsey and Berks (2019) discovered that if children manifest positive emotions teachers tend to regard them as less aggressive and more prosocial. Especially, boys who expressed anger were perceived as more aggressive.

Ersan (2020) confirms that expression of anger can indirectly predict physical aggression and relational aggression through emotional regulation, however, negative emotions do not have to turn into aggressive behaviour. Therefore, it is important to support the development of emotional regulation. Even though Ersan (ibid.) suggests that anger can lead to aggressive behaviour before children develop emotional regulation, however, in previous studies, Yektatalab et al. (2015) reported only 13% prevalence of impulsive anger in pre-school children. Supporting emotional regulation thus is not the only intervention strategy. Gower et al. (2014) recommend that educators encourage prosocial behaviour in pre-school children because according to their findings, aggressive behaviour predicts also future maladjustment. Social learning through positive modelling was confirmed to be helpful in reducing aggressive and disruptive behaviour of pre-schoolers (Rababah & Alrub, 2018).

It is necessary to point out that pre-school age is a specific developmental period and revealing covertly aggressive behaviour in front of the whole group is an unacceptable strategy of working with a social group. It is necessary to realize that this is an ethically delicate situation, which is perceived differently by children. In this context, Majzlanová (2004) recommends working with the story as a suitable technique.

In particular, working with a story in which elements of aggression are "hidden" through a fairy tale action and children are thus presented with a solution in a very acceptable way. To illustrate, in a specific fairy tale about the Brave Tin Soldier, Majzlanová (2017) points out the possibility of playing hypothetical scenarios that contain (possibly from the perspective of children themselves) conflict and its solution. The author (ibid.) develops the "traditional" possibilities of working with the story in that the adult also selects / creates scenes that are integrated into the story as new and at the same time familiar to the children.

Combining observations with individual interviews with children with the addition of sociometry is currently an option that is accessible not only to the child (regardless of the position that they have in the aggressive conduct), but also to the social group itself. In a given developmental period, it is advisable to use a story / fairy tale, which may not only have a diagnostic potential, but also an inhibitory application (Kováčová, 2014). To support inclusion, it is important to identify covert aggression and to help children create more functional social strategies. Covertly aggressive behaviour may on one hand present the cause of exclusion, however, on the other hand it may be a result of peer exclusion. Supporting prosocial behaviour in peer groups can therefore support inclusive preschool environments.

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INNOVATIONS IN SECURITY POLICY STEMMING FROM CYBERSECURITY ACT IN THE SLOVAK REPUBLIC IN RELATION TO SELECTED PUBLIC ADMINISTRATION BODIES

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Abstract: The paper deals with innovations in security policy, which are mainly influenced in relation to cyberspace. Currently, cybersecurity issues are among the most discussed, mainly because most of both the professional as well as personal activities have moved to the online environment. Along the advantages of this phenomenon which undoubtedly include, in particular, the use of the Internet, we may also distinguish in an exponentially increasing magnitude the risks of cyber-hazard of various levels of significance. It is therefore essential to have an institutional framework of public authorities ensuring the safe use of the online environment as well as for dealing with possible security incidents. The aim of the paper is thus to analyze those public administration bodies in the Slovak Republic that have powers in the researched area, as well as to point out the modern trends related to this issue.

Keywords: cyber security, cyberspace, legislation, CSIRT

1 Introduction

Innovation is essential for the successful functioning of the company. Among other things, the transformation of established systems (less functional) into those required by the altered situation is required. Successful functioning of modern public administration depends on a sophisticated organizational system that responds promptly to all of the challenges of social life. Management of public administration in the twenty-first century will not function properly with formerly established procedures and must inevitably reflect new innovations, specifically in the area of information and digitalization of the society. A rapid boom of the so-called cloud services, artificial intelligence and networked IT systems requires both legislative treatment as well as readiness of public authorities for possible negative consequences. At the same time, it is necessary to draw attention to a certain spatial specificity in this area which blurs national borders. Thus, the issue under consideration naturally presupposes the involvement of transnational structures and international organizations. In that vein, the paper aims to analyze the system of public administration bodies that in any way participate in ensuring cybersecurity in the national space of the Slovak Republic. The issue under review is also determined by the fact that the impact of tasks and responsibilities related to ensuring cybersecurity goes beyond the remit of public authorities as it also directly and exponentially affects the private sphere. Therefore, the aim of this paper is to analyze the legislation under the Act on Cyber Security in the Slovak Republic and to point out problematic areas. Using scientific synthesis in the paper enables us to abstract those penetration points that fundamentally change practices and solutions hitherto used in favor of an effective cybersecurity policy. This makes the research area a modern challenge for the scientific

community, even in academia. The social government provides not only the fundamental rights, but it is obliged to make positive “social activity” and create a social system focused on the implementation of a social justice (Žofčinová 2015).

2 Cybersecurity policy as one of the key features of public administration bodies in the field of security policy

The subject of security policy is undoubtedly a question of security, the scope of which naturally changes and expands from year to year. Security policy is closely related to defense policy and is in the epicenter of interest of both top representatives of countries as well as of supranational units. (Breichová Lapčáková 2019). From a substantive point of view, security policy could be defined as a set of legislation of a diverse nature, which contains the basic rules for maintaining security or dealing with situations where security is compromised, respectively.

A document forming a basis of the state security policy is usually in the form of a security strategy, reflecting the dynamic development of the security environment, responding to the increasing acuteness, intensity, interconnection and global impact of security threats, as well as the eradication of borders between internal and external security (Majerčák 2016). The security strategy is always based on the values and principles that each state recognizes. The basis for successful implementation of the security policy forms a revised system of public authorities with sufficient competences for potential crisis situations. Thus both the governmental as well as the relevant central state administration bodies have an irreplaceable role in this respect. Current trends consist of the ad hoc establishment of security councils or commissions (Majerčák 2013).

Objective reasons, such as global competition, technological and information revolution, and the development of the security environment create the need to address security threats and challenges through international cooperation. In this sense, an active membership in international organizations, especially the European Union (EU) and the North Atlantic Treaty Organization (NATO), which create some scope for the realization of the common security policy, are of importance for individual states.

In the Czech Republic, the social policy issue is addressed in the social doctrine and is usually understood as a set of legal norms governing social protection including social security assistance, as well as, for example, the protection of women and adolescents in labour relations, as well as other social and legal protection (Chvátalová 2015).

Recently, the security policy has undergone some forms of innovation. The very effect of both computerization as well as the security policy led to the birth of its subgroup, the so called cybersecurity policy. The issue of security policy is complex and requires a wider scope for its analysis. However, due to the purpose of this paper, the authors only focus on its relevance in cyberspace.

The European Union also has a clear position on the subject in the longer term. One of its objectives is to promote the development and dissemination of electronic and information technologies (Articles 179 and 180 of the Treaty on the Functioning of the European Union). However, the implementation of this provision of primary law presupposed the adoption of another series of measures at both the European and national levels.

The Stockholm Programme adopted by the European Council in December 2009 (17024/09) set priorities for the creation of an European area of freedom, security and justice over the next five years. Its content was the result of discussions within the

European Parliament, the Council of the EU, the Member States and the programme stakeholders on the basis of the objectives presented by the European Commission. EU leaders predicted the escalation of cyber challenges in the form of an increasing number of sophisticated threats and attacks presenting a serious threat to the security, stability and economic prosperity of Member States as well as of the private sector and the wider society. At the same time, the importance of keeping the cyberspace open to the free flow of ideas and information and freedom of expression was recognized and thus further regulation took place (Treščáková 2018).

The European Parliament resolution of 12 September 2013 on a cybersecurity strategy of the European Union: an open, safe and secure cyberspace (2013/2606 (RSP)) defines an open, safe and secure cyberspace at the basic level, while laying down a call for all EU Member States to arrange for cyberspace and cybersecurity to constitute one of the strategic pillars of the security and defense policies of each Member State. Looking at the situation in Europe, it is possible to talk about the migration of its inhabitants, particularly towards the New World, over the centuries. The reason for this was the vision of a free and friendly environment in America as such. However, at present there is a significant increase in the immigration to Europe, not because it is poorly populated, but due to the fact that the wealth of Europeans has increased and even the poorer Europeans do not incline to accept any heavy, humiliating or degrading work. In the target countries, therefore, the international migration can be used as a tool to address the specific labour shortage in the labour market (Olejárová Čajka 2016).

Directive (EU) 2016/1148 of the European Parliament and of the Council of 6 July 2016 concerning measures for a high common level of security of network and information systems across the Union (the so called NIS Directive) sets out measures to achieve a high common level of such networks and systems within the EU with the aim to improve the functioning of the internal market. The directive brought along certain obligations for EU Member States, in particular:

- to adopt a national network and information security strategy,
- to set up a network of computer security incident response teams (further as „CSIRT“),
- to promote rapid and effective operational cooperation between Member States and the EU, as well as between individual Member States. This area in EU is covered by ENISA - European Union Network and Information Security Agency.

The developments in this area continue both in practice as well as in law. In September 2018, the Council and the European Parliament opened negotiations, which should have been concluded with the adoption of some common European cybersecurity legislation. Subsequently, Member States responded by adopting the relevant national legislation. At the national level, the Slovak Republic reflected these requirements through multi-level regulation, adopting various strategic and legislative documents.

Moreover, in this sense, the Government of the Slovak Republic created the Cyber Security Concept of Slovakia for 2015-2020, which defined the basis and objectives of the Slovak Republic in the field of cybersecurity. It has defined as the strategic objective in cybersecurity to create an open, secure and protected national cyberspace that would build confidence in the reliability and security of critical information and communication infrastructure, as well as assurance that it will perform its functions and serve national interests in the case of cyber-attacks.

The concept was followed by the “Action Plan for the Implementation of the Cyber Security Concept of Slovakia for 2015-2020”, which specifically defined the tasks and the way of their implementation, based on the fact that the Slovak Republic had already taken some steps in that area. The basis of legal

regulation creates the Act No. 69/2018 Coll. of 30 January 2018 on cyber security as amended (hereinafter also as “the Cyber Security Act”), which became effective in the Slovak Republic from 1.4.2018.

2.1 Cyberspace

While the social expansion of the computerization offers new qualitative as well as quantitative opportunities, it also brings new, exponentially increasing threats. Cybersecurity policy is thus closely linked to the so-called cyberspace. The notion of cyberspace cannot be ignored even in legal science, although it may still seem to us to be inadequate. It is one of those terms that shall become more internationally established, and only then the countries gradually embrace it in their legal orders. If we want to define it, we must be able to establish its content. Unfortunately, its boundaries are sometimes determined intuitively and the final result often exceeds those boundaries. It is a space based on rules that we do not always understand in whole and, moreover, it changes rapidly within an internal, intangible system. We tend to accept the benefits of cyberspace positively, albeit with caution. We have become accustomed to the global information and communication network, the availability of ad hoc data and information, the speed of data transmission, the use of online platforms, the benefits of which are undeniable. However, sometimes we are unable to identify the risks involved in time and accompanying negative phenomena such as misuse of data (and not only personal data) for unforeseen purposes, or unjustified profit from them. What is worse, those phenomena are usually ahead of any effective regulation. In addition, the connection to the Charter of Fundamental Rights and Freedoms is unmistakable, whether it regards the right to respect for private life and communication, the right to freedom of expression, the right to information, the freedom to conduct business and its protection, or the right to property and privacy policy (Hučková - Rózenfeldová 2018). We must therefore consider that it is important to define at least the basic framework for cyberspace and to regulate the movement of its borders legally.

We may simply define a cyberspace as “an environment composed of worldwide interconnected hardware, software and data networks” (Ottis - Lorents 2010). By specifying it in more detail, cyberspace can also be perceived as “a global space within the information environment the distinctive and unique character of which is limited by the use of electronics and electromagnetic spectrum to create, store, modify, exchange and use information through interdependent and interconnected networks using information and communication Technologies”. (Kuel 2009).

According to the Act on Cybersecurity in Slovakia “cyberspace is a global dynamic open network and information system, consisting of activated elements of cyberspace, persons performing activities in this system and relationships and interactions between them” (Article 3, letter b).

These definitions form merely an elementary framework for the purposes of the paper. The authors recognize that the perception of cyberspace may differ in other scientific sectors and at various times. A closely related fact is the emergence of the issue of security or the danger of cyberspace. As regards the notion of cybersecurity, the law refers to a situation in which “networks and information systems are able to withstand to some degree of reliability any action that compromises the availability, authenticity, integrity or confidentiality of the stored, transmitted or processed data or related services provided or accessed via these networks or information systems” (Article 3 letter g).

2.2 Cyberspace security

The Act on Cybersecurity therefore envisages a definition of a certain static phenomenon, the disturbance of which is to some extent permitted via the so called degree of reliability, the scope of which is not specified. It is natural that this term is difficult to define, especially in the electronic sphere, which is the reason

why the law maker tried to define it in a negative way and is more concerned with the spectrum of security breaching situations.

As the least dangerous situation it considers the so called *risk* - according to the Act, this corresponds to a degree of cyber threat that is expressed by the probability of the occurrence of an undesirable phenomenon and its consequences (Article 3 letter h). Again, the legislation does not specify the degree of probability is required - whether a minimum indication of the adverse event is sufficient to trigger mechanisms to protect cybersecurity or what is still tolerated as a maximum level where the safety is yet not compromised.

A higher degree of danger is a threat - that is any reasonably recognizable circumstance or event against networks and information systems that may adversely affect cyber security (Article 3 letter i).

The Act considers as the most significant breach of cybersecurity the cyber security incident. According to the Act, such an incident may occur either:

1. if any event occurs that has a negative impact on cybersecurity due to a breach of network and information system security or a breach of security policy or binding methodology;
2. if it is a consequence of any event stated below:
 - loss of data confidentiality, destruction of data or impairment of system integrity,
 - limiting or refusing the availability of a basic service or a digital service,
 - high probability of compromising the activities of the basic service or the digital service, or
 - threats to information security (Article 3 letter j).

The vagueness and inaccuracy of these terms can be justified in part by the very definition of the scope of the Act, which explicitly states that it only lays down minimum requirements for ensuring cybersecurity (Article 2 (1)). At the same time, it also defines its scope negatively by identifying specific legal relationships which are not covered by its scope such as the requirements for securing networks and information systems under the general regulation on the protection of classified information, the provisions of specific rules on the investigation, detection and prosecution of criminal offenses, the requirements relating to network, infrastructure and information systems security and cybersecurity incidents reporting in the banking, finance or financial system according to special regulations, including the European Central Bank or the European System of Central Banks, etc. (Article 2 (1)).

The definition of the relationship between security and confidentiality plays a role in defining the security boundaries of cyberspace. Under the term "confidentiality" the Act understands a guarantee that the data or information is not divulged by unauthorized entities or processes (Article 3 (d)). We consider confidentiality as one of the most important aspects that make cyberspace a safe space. In the modern age of the Internet, the issue of security is crucial. With the increasing number of technologies, the opportunities to access sensitive data are also increasing. In the Internet space, where private computers, mobile phones, possibly watches, cars or home appliances can be interconnected, a complex network structure arises. This connection of different devices is also commonly referred to as the „Internet of Things“. This very wide branching gives space for little or no control over possible security leaks, which may be an easy mark for experienced cyberspace attackers. Jozef Mintál from Matej Bel University in Café Europa pointed out to one peculiar case from abroad. Some hackers wanted to acquire a lucrative database of gamblers who spent large sums in casinos. Instead of overcoming the complicated protection of the casino computer network, they have chosen an easier route. They managed to get into the thermometer in the aquarium of the casino hall. The

thermometer was connected to the internal network, with the help of which they were able to find the database and download it. It was thus confirmed that not only in mechanics but also in cyberspace holds the proverb - the chain is as strong as its weakest link (Mintál, 2018) - its importance. So the question stands, where are the limits of cybersecurity?

3 Institutional framework for cyber security management

The unboundedness of cyberspace requires the interconnection of national and supranational authorities of a similar type. Due to the membership of the Slovak Republic in the European Union, the relevant bodies of the European Union play an essential role in this respect [Hučková – Sokol - Róznfeldová 2018]. We consider it important to specify that these bodies do not function on the basis of the subordination principle; the EU authorities are rather in the position of coordinating, supporting and advisory bodies towards national authorities.

In the Slovak Republic, pursuant to the Cybersecurity Act, the competences were entrusted to a relatively wide range of competent public authorities. This reflects the fact that the scope of the online platforms is currently so broad that it requires an intervention in almost every area of social life and therefore demands appropriate regulation. According to the Cybersecurity Act, the competence is entrusted to the National Security Authority (hereinafter also the NSA), the Ministry of Transport and Construction of the Slovak Republic, the Ministry of Finance of the SR, Ministry of Economy of the SR, Ministry of Defense, Ministry of Interior, Ministry of Health of the SR, Slovak Information Service, Office of the Deputy Prime Minister for Investments and Informatics and Military Intelligence, which are considered central authorities in the field of cybersecurity (Article 4 letter a). Other ministries and other central state administration bodies within the meaning of the Act No. 575/2001 Coll. on the organization of government activities and the organization of central state administration, as amended (e.g. the Ministry of Justice of the Slovak Republic, the Ministry of Culture of the Slovak Republic, etc.) are entrusted powers in the field of cyber security by the Act, but are not considered as central authorities for cybersecurity (Article 4 letter b). This category also includes the General Prosecutor's Office of the Slovak Republic, the Supreme Audit Office of the Slovak Republic, the Office for Supervision of Health Care, the Office for Personal Data Protection of the Slovak Republic, the Office for Regulation of Network Industries and other state bodies within its competence (e.g. district offices, customs offices, Financial Directorate of the SR, Statistical Office of the SR, etc. (Article 4 letter b).

3.1 National level

The national level of the competent authorities in the Slovak Republic is based on the centralization principle. Since 2016 the National Security Authority has been a central state administration authority for cyber security. In accordance with the legislation in force, it builds technical, personnel and organizational capacities in the field of cybersecurity (e.g. it accredits the CSIRT units – Article 13 of the Cybersecurity Act), solves cybersecurity incidents and builds security awareness in the Slovak Republic. At the same time, the National Security Authority is also a central state administration body for the protection of classified information, encryption service, and cybersecurity and trust services. It is a national contact point for cybersecurity for the European Union, the North Atlantic Treaty Organization (NATO) and the Organization for Security and Cooperation in Europe (OSCE).

Given that cybersecurity is only one of the main powers of the NSA, it established, for the purpose of specialization, the Slovak Computer Emergency Response Team - National Unit SK-CERT. Since 1 September 2019, the NSA transformed that unit into the National Cybersecurity Center SK-CERT - Computer Emergency Response Team (further as SK-CERT). Within the organizational structure of the Authority, the SK-CERT has the status of a separate unit. The national unit SK-CERT is also an

accredited member of Trusted Introducer and also a member of FIRST (Forum of Incident Response Security Teams) with a global membership of 490 teams from 92 countries.

SK-CERT primarily provides for:

- national and strategic cybersecurity management and threat analysis activities,
- coordination of dealing with cybersecurity incidents at national level,
- services related to the management of security incidents, the elimination of their consequences and the subsequent recovery of information systems in cooperation with the owners and operators of such systems,
- creation, management and support of cybersecurity competence centers, e.g. tuition, education, training and research.

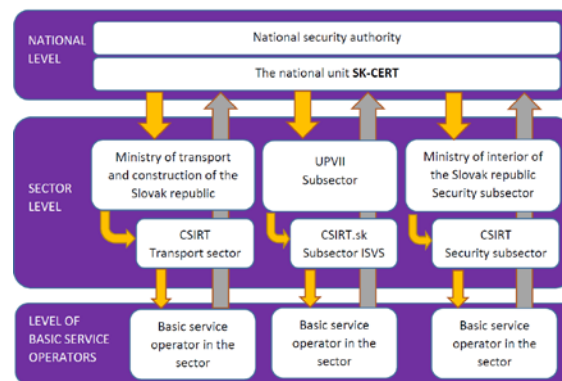
Under the NIS Directive, each Member State is obliged to set up the so-called Computer Security Incident Response Team (hereinafter only as “CSIRT team”). These teams can therefore arise at different levels (national, governmental, academic, armed forces, commercial or other). They differ in the scope of their powers and competences, as well as regards the requirements for their establishment and operation. Such a unit is formed by a team of experts whose main task is to provide the services needed to deal with computer security incidents, mitigate or eliminate their consequences, and subsequently restore the operation of operational information systems and related information and communication means. CSIRT teams differ in terms of groups they aim at. The basis of the social support reform represents the principle of focusing on social assistance, which works on the basis of testing the needs, the essence of which is to direct public funds in areas where it is most lacking. A gradual access to the revision and cancellation of several benefits is essentially connected with introducing the adequate compensation mechanisms for the poor and the most vulnerable. In socially-oriented economies, social assistance takes into account the ethical and moral values of society while respecting human dignity (Žofčinová 2017).

The national unit of CSIRT in the Slovak Republic is the National Cyber Security Center SK-CERT. In relation to other CSIRT teams, it has the position of a superior authority, coordinates their activities and creates the basis for strategic decision-making in the area of cybersecurity. Its importance as a national CSIRT unit lies also in the fact that it fulfills the notification and reporting obligations to the relevant bodies of the European Union and the North Atlantic Treaty Organization and also participates and supports the creation of national and international partnerships in the field of cybersecurity. Its powers could be specified in several groups:

- in relation to the national level – it cooperates with central authorities, other government agencies and CSIRT units, basic service operators and digital service providers in the fulfillment of tasks under this Act;
- in relation to users – it receives national reports on cybersecurity incidents, sends early warnings, addresses cybersecurity incidents, alerts and provides warnings regarding serious cybersecurity incident, imposes reactive actions and approves the safeguards, secures and is responsible for coordinated resolutions of cybersecurity incidents that have occurred at the national level;
- in relation to governmental bodies – it systematically acquires, gathers, analyzes and evaluates information on the state of cybersecurity in the Slovak Republic;
- in relation to foreign countries – it receives reports on cybersecurity incidents from abroad and ensures cooperation with international organizations and authorities of other countries in dealing with cross-border cybersecurity incidents and ensures the membership of the Slovak Republic in the cooperation groups as well as in the network of CSIRT units.

In the sense of the NIS Directive, there is the intention of each State to create a sophisticated system of top-down authorities able to respond promptly to any threat of a security incident. Individual central bodies established by the Cybersecurity Act thus have their own CSIRT teams in the Slovak Republic, while under the umbrella of the Deputy Prime Minister for Investment and Information Technology (also UPVII), the CSIRT.SK team also covers the public administration section. This team is a governmental unit in the CSIRT network for the sub-sector of public administration information systems. The CSIRT governmental unit must meet the conditions of accreditation under Art. 14 and must also fulfill the tasks under Art. 15 of the Cybersecurity Act. The CSIRT government unit is also included in the list of accredited CSIRT units maintained by the NSA.

Fig. 1: Outline of organizational structure



Source: Cyber Security Association Workshop (July 9, 2019)

CSIRT units' tasks are of a substantial nature and play an important role in cybersecurity, as their prompt response can often avert disaster. In terms of their activities, these can be classified as reactive services (e.g. incident resolution, incident detection, warnings and alerts, providing on-site incident resolution, proposing measures to prevent the continuation, spread and reoccurrence of incidents, malware analysis, etc.) and as proactive services. As regards the latter, these include services such as education (Tirpák 2011) and awareness building in the field of information security, vocational training and cooperation, cooperation with other CSIRT units, consulting activities in the field of information security, information security audit or assistance in setting up new CSIRT units, which play an essential role in the creation of the so-called bottom-up safety.

This relates to the fact that CSIRT teams created by commercial companies and universities dominate in the world, whereas in the Slovak Republic their gradual integration in the position of public administration takes place. However, given the fact that most of the work as well as personal activities are already carried out in the online environment, we are in a situation where it is necessary to ensure the environment of non-professional community by competent authorities that will foster the cybersecurity.

The report prepared by CSIRT.SK team in August 2019 (CSIRT.SK, 2019) shows that the protection of the state is inadequate in cyberspace, and therefore the Slovak Republic has to embark on the path of enlightenment for ensuring the security in cyberspace. On the basis of the above stated, it is gratifying that there is at least an essential involvement of the non-professional feature, which is the Slovak Security Policy Institute, operating the Slovak cyber security portal CyberSec.sk, which has since 2014 served as a central platform for the Slovak cyber security community.

At the same time, the Association of Cyber Security acts as a voluntary and independent civil association, the aim of which is

to represent the Slovak information and cybersecurity community in the role of its professional organization.

3.2 Open Co-operation

The position and nature of cybersecurity policy implies that the success of its security often depends on a network of mutual cooperation that is constantly evolving and developing. For the purposes of this paper, we refer mainly to the following links related to the active portfolio of European cooperation.

In the area of the European Union organizationally operates, for example, the ENISA - the European Union Agency for Cybersecurity (sometimes referred to also as the European Network and Information Security Agency), which is a very center of cybersecurity expertise in Europe. It is a partner of government CSIRT units of individual Member States. Headquartered in Heraklion, Crete, its operations office is located in Athens. Since its establishment in 2004, ENISA has been actively contributing to a high level of network and information security in the Union, raising awareness of network and information security in society and developing a culture in this field.

An important role in this respect is also played by the European Cyber Security Organization (ECSO), which has, since 2016, brought together more than 200 public authorities, private sector entities as well as academia from 27 countries. Its main objective is to support all kinds of initiatives or projects aimed at developing, promoting and fostering European cybersecurity, promoting and protecting the European digital single market from cyber threats, and developing and increasing the competitiveness of the ICT sector (further as ICT). It is a rare combination of public-private partnerships that benefit from sharing innovative practices and solutions for different sectors.

The Central European Cyber Security Platform (CECSP) was established in 2013 at the initiative of both the Czech Republic and Austria. It consists of representatives of government, national and military CSIRT teams, together with national security authorities and national cybersecurity centers from Slovakia, the Czech Republic, Poland, Hungary and Austria. The aim of the platform is an intensive cooperation of neighboring countries in the field of cybersecurity, in particular the exchange of information and sharing of know-how on cyber threats, as well as on potential and already performed cyber-attacks.

The Organization for Security and Co-operation in Europe (OSCE), which since 1995 brings together up to 57 countries in Europe, Central Asia and North America, has also strengthened its prominent position. For cybersecurity issues, it has a Security Committee in the format of the Informal Working Group (IWG) for dealing with cyber issues.

At the same time, the competent authorities of the Slovak Republic cooperate with partner governmental authorities, especially of neighboring countries (e.g. with the Czech National Cyber and Information Security Agency), or of those Member States that intensify proactive cooperation themselves (e.g. the French ANSSI - Agence Nationale De La Sécurité Des Systèmes D'information, or GOVCERT.LU of the Grand Duchy of Luxembourg), respectively.

4 Conclusion

Cybersecurity is one of the areas developing at maximum speed. At present, the *lex generalis* in terms of public administration embodies the analyzed Cybersecurity Act as well as the act No. 95/2019 Coll. on Information Technologies in Public Administration as amended. Along with the implementation of the general intention of computerization, which is the gradual centralization of public administration information systems and their operation in the cloud environment, it is necessary to create a process for the gradual centralization of cybersecurity management, which is currently in the development phase.

According to the document Strategic Priorities: Information and Cybersecurity prepared by the Office of the Deputy Prime Minister for Innovation and Information Technology and approved on July 25, 2019, it follows that the SR does not have sufficient professional capacities to solve the necessary tasks at central and departmental level, or necessary experts to ensure the protection of its own systems. However, neither the private nor the academic sectors have the necessary experts (in number and focus) and the security of the state cannot be based on external collaborators.

However, for the effective cybersecurity coordination process it is essential that an effective way of enforcing security measures in public administration is established. The aim of the National Cyber Security Center SK-CERT will thus be not only to develop capabilities to deal with cybersecurity incidents at national level, but also to expand and share knowledge and experience in this area and to actively cooperate with the public, professional organizations and the academic sector.

A joint effort to innovate cybersecurity measures strengthens the positions of stakeholders in the international environment. In order to ensure cybersecurity, it is necessary to find a consensus on addressing new security challenges and to jointly promote that consensus at a pan - European scale. In May 2019, the Council of the European Union introduced a sanctions regime that allows the EU to take targeted restrictive measures aimed at discouraging and combating cyber-attacks posing an external threat to the EU and its Member States. The new sanctions regime is part of the of EU Cyber Diplomacy Toolbox, which is a framework for a common EU diplomatic response to harmful cyber activities, allowing the EU to take full advantage of the Common Foreign and Security Policy measures. These include e.g. statements by the High Representative, diplomatic demarches and, where necessary, restrictive measures to respond to harmful cyber activities.

Finally, it should be added that the security policy as a whole is also closely influenced by the government and the political situation in the country. Its stability is undoubtedly improved with the stability of the executive power in the state, which guarantees the continuity of change and innovation. The Slovak Republic's recent parliamentary elections and its outcome will definitely affect the future direction of cyber security within the security policy.

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EFFECT OF MARKETING COMMUNICATION ON CONSUMER PREFERENCES AND PURCHASING DECISIONS

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Abstract: Since the relation between marketing communication and consumer behaviour is interactive, the current global trend is to explore marketing communications in connection to consumer behaviour. Marketing communication influences, shapes and changes consumer behaviour. And vice versa, changing consumer behaviour makes companies modify their marketing communication by implementing new forms and tools to gain the trust of customers and to influence purchase. In order to build long-lasting customer relations, marketing communication, as a tool of influencing consumer behaviour, is applied. The paper deals with the impact of marketing communication on consumer preferences and purchasing decisions in selected target groups. We will point at marketing communication tools that influence buying behaviour. We conclude that the digital communication has a growing impact on consumer way of acting.

Keywords: Consumer behaviour, marketing communication, online marketing communication, preferences.

1 Introduction

The issues of consumers and their behaviour represent one of the most dynamic areas in marketing and belong to the most important activities in marketing strategic decisions-making process.

Doing research into consumer behaviour helps to understand the needs of customers, maps the capacity and trends that support efforts to better understand individual markets and the subsequent development of marketing strategies. Considering the number of controllable factors and their tendency to interact and their mutual interaction, it is a relatively complex process. (Kusá, Hrabáčková, 2012, compare with: Fašiang, 2012; Suchanek, Kralova, 2018). Therefore, in relation to this phenomenon, it is questionable how particular product categories change across segments, with which brands consumers get older and what their approach to marketing communication will be.

Thus, consumer behaviour and their development are influenced by various dynamic global changes, mainly of business, trade and marketing (Bialynicka-Birula, 2018; Horecký, 2018; Olczyk, Kordalska, 2018; Ajaz Khan, Çera, Nėtek, 2019), as well as by new qualitative and quantitative methods of research, technological opportunities of interactive information search, increase in digitization and artificial intelligence, along with changing approaches to marketing communication, especially online. Digital technologies are therefore the main phenomenon is shaping today's society, and since 2010, they have essentially changed the world we live in. (Musová, 2015; Ključnikov, Belás, Smrčka, 2016; Tomčík, Rosenlacher, 2018).

The digital technology boom is largely reflecting the changes in marketing and marketing communication, and bringing brand new opportunities and ways to reach consumers. Since its inception, marketing communication has been subject to a continuous alternation, whereas its changes are so frequent that many companies find it difficult to maintain current trends in this area of marketing (Vašítková, 2014).

One of the main principles of marketing communication today is synergy and interaction. When creating and implementing a marketing mix, it is very important that the tools work consistently, synergistically and interactively. In the practice of marketing communication, these instruments should be as closely as possible linked to achievement of all synergies and, inter alia, to the purpose of saving funds. According to Tuten and Solomon (2015), marketing communication is evolving and has so far gone through three stages - traditional, traditional and

currently is undergoing a socio-media stage. These stages depend on the overall nature of marketing in a given period.

The issue of digital marketing communication was addressed in their current publication *Marketing 4.0* by Kotler, Kartajaya, Setiawan (2016), who contributed significantly to the latest knowledge of the development of marketing communication from traditional forms to digital forms. Subsequently, in *Principles of Marketing* (Kotler and Armstrong, 2018), we see a fundamental change in understanding of marketing communication when defining the communication mix that the authors say is a "specific mix of advertising, public relations, personal selling, sales promotion and direct marketing that companies use to engage consumers, convincingly communicate customer value, and build customer relationships" (Kotler, Armstrong, 2018, p. 99). This is a change that includes consumers into the communication process, i.e. we are talking exclusively about bidirectional communication. Another alternation is that tools that ensure short-term marketing communication goals (advertising goals) are turned into tools that are aimed at building customer relationship, and hence, to ensure the long-term strategic goals of companies. Particular concepts of communication mix composition vary depending on the authors. At present, in the time of very dynamic development of new technologies and with them the emergence of new tools and forms of marketing communication, individual forms become interdisciplinary and cannot be strictly assigned to individual tools. Media, as means of communication, should be able to help us find a successful solution to a marketing problem; they also provide a space for implementation of the measures which have been adopted within the sphere of advertising. (Krajčovič, 2015, p. 25).

The boom of interactive technology shifts marketing communication from a mass monologue to an interactive dialogue. Interactive marketing enables customers to participate in the process of building brand image (Szwajca, 2018; Bartok, 2018) on a specific market or in a distinct target group. However, the resulting effectiveness of marketing strategies depends on correct identification of the specific segment, on the form and content of the communication throughout the purchasing and decision-making process, and ultimately, on the product attributes that determine the choice of the appropriate medium. Knowing the credibility of the source of information as well as the impact of each marketing communication tool can reveal consumer preferences and the ways in which they want to receive relevant information. Taking into account consumer expectations, an organization can use the integrated marketing communication in a way that is most efficient and cost-effective for it (Oancea Olimpia, 2020). Consumer behaviour research is thus a key factor for areas, such as, analyzing changes in consumer trends, segmenting and identifying the target segment, or analyzing the effectiveness and response of marketing campaigns (Benda-Prokeiová et al., 2017). The development of technologies also inherently affects consumers themselves. As consumers adapt to today's digital technologies and use them in everyday life, new consumer segments are emerging across generations. A new segment is, e.g., Generation C, (Connected Generation), which is not defined according to the year of birth of individuals, but according to psychographic segmentation features, such as, lifestyle, attitudes to brands, connection to digital technologies, etc. (Kusá, Piatrov, 2019 by Solis, 2012., Harris, 2012; Almeida, Almeida, Mota, 2019).

2 Purpose and Methods of Research

The purpose of the paper is to point at changes in consumer behaviour in the context of corporate marketing communication transformation and subsequently examine the impact of marketing communication on consumer preferences and purchasing decisions in selected target groups. In order to accomplish the purpose of the paper, the research into the

credibility of marketing communication tools and the research into understanding the impact of marketing communication on consumer buying behaviour preferences were conducted. Each part of research was focused on a different target audience and both parts were carried out in 2019. In order to evaluate the research into consumer behaviour, it was necessary to identify the basic target groups of consumers.

The identification of target groups is based on multi-attributive comparison of research indicators evaluated through cross-analysis.

The basic indicators are the demographic data of the respondents interviewed compared according to the attributes of the selection of the type of retail operation from the viewpoint of the main purchase made. In the first part of research, the identification of target groups was carried out according to the demographic structure of respondents on the sample from the perspective of indicators selected. On the basis of random probability sampling, the sample of respondents was calculated at 95% confidence estimation, tolerable error margin +/- 3.5%, and the standard deviation was estimated at 0.5, as it was not possible to carry out a pilot survey for our purposes. The sample of respondents was 784, which was also collected - a total of 788 respondents from Slovakia.

The research was evaluated by means of factor analysis, which is based on the assumption that the dependencies between the monitored variables are the result of the action of a certain number of background non-measurable quantities, which are referred to as common factors. The aim was to know and utilize (based on the dependencies of observed variables) the structure of common factors, which are considered as hidden causes of mutually correlating variables (Hebák et al. 2007). Thus, the factor analysis allowed the generation of basic parameters, which can be used to interpret phenomena that are not directly measurable (Mura, Marchevska, Dubravka, 2018).

In the second research, focusing on Generation C, a sample of respondents was deliberately selected within the set time period of 2 months of 2019, and the sample consisted of all respondents who were involved in the research at the time of the questionnaire distribution. 302 surveyed participated in the research.

Processing of collected data was realized in the environment of SPSS statistical program. The obtained data were evaluated by one-dimensional statistical analysis, while some selected data were evaluated by multidimensional statistical analysis. The results were visualized through different types of graphs and pivot tables, showing the percentage of each response.

Both researches were of a broader nature, in the paper only some selected results, copying the aim of the paper, are presented.

3 Marketing communication and consumer preferences - results

In the first part of the research carried out in early 2019 the sample of respondents in terms of the demographic distribution consisted of 51.1% of women and 48.9% of men in the total number of 788 respondents from Slovakia. The Table 1 shows the age and income margins, with meritorious questions.

Table 1: Demographic structure of respondents in terms of age and income

Age span	%	Income span	%
to 20 y.	13.2	Up to 400 €	14.7
21 -30 y.	18.0	400- 599 €	21.2
31 - 40 y.	23.8	600- 799 €	25.4
41- 50 y.	17.3	800- 999 €	21.0
51 - 60 y.	16.2	over 1,000 €	15.3
Over 60 y.	11.6	No income	2.4

Source: Own processing, 2019

The smallest representation was constituted by age groups up to 20 years of age (13.2 %) and over 60 years of age (11.6 %),

whereas most respondents fell within the age range of 31 to 40 years of age (23.8 %). As income is relevant to making purchases, it's been found out that the highest percentage of the respondents had stated that their monthly income ranges from 600 to 799 euros (25.4 %), the option over 1,000 euros was chosen by 15.3 % of the respondents, which shows the average salary conditions of the respondents, which are appropriate to their education and the region they live in. When considering the geographic breakdown of the respondents in terms of their residence, more than 60 % live in the city. The majority of the surveyed have attained secondary education (68.1 %).

The conducted research focused on identifying the hidden relationships between the variables that explain the connection between marketing communication and consumer preferences. In order to identify the key factors, factor analysis was used. The analysis was based on the assumption that several measured variables are closely connected. For the purpose of deeper understanding and explanation of the key factors, the following areas had been chosen to explain the connection between marketing communication and the perception of consumer preferences by the concerned groups:

- parameters affecting the purchase of everyday consumer goods,
- parameters affecting the credibility of communication tools,
- parameters affecting the impact of communication tools on purchasing.

From the point of view of perceiving the preferential values by consumers when purchasing consumer goods, the following attributes are decisive. Based on the factor analysis, they influence the choice of consumer goods.

Table 2: Attributes affecting the purchase of consumer goods

Attribute	Factor 1	Factor 2	Factor 3
Packaging		0.279	0.392
Packaging size		0.677	
Good price	-0.213	0.717	0.182
Discount when buying more pieces	0.227	0.653	
Environmentally friendly product	0.533		
Product quality	0.494	-0.192	0.121
Product made in Slovakia	0.654	0.15	0.124
Product content	0.709		-0.134
Brand	0.29	-0.366	0.348
Country of origin	0.787		
Possibility to return goods			0.415
Affected by point-of-sale advertising		0.128	0.767
Gift with purchase		0.39	0.686

Source: Own processing, 2019

Table 2 shows that the decisive influences affecting Slovak consumers when purchasing consumer goods are:

- factor 1 – product origin and quality;
- factor 2 – advantageous purchase;
- factor 3 – the effect of point-of-sale marketing communication.

These factors imply that the Slovak consumer prefers the quality of the goods and they care about the origin of the goods. We can assume that the Slovak consumer prefers the choice of Slovak goods as they find them good quality (this statement applies mainly to purchasing everyday foods). The second factor implies that the price level is very important when shopping and that the

consumer prefers goods that are financially advantageous. The third factor emphasises the fact that the Slovak consumer often decides to buy a product at the moment of doing their shopping and is subject to the impact of communication activities at the point of sale, advertising in the shop, sales promotion, etc. From the point of view of examining the process of making a purchase, it is important to point at the parameters affecting the credibility of communication tools. The aforementioned factor matrices make it clear that when purchasing everyday consumer goods, not every form of marketing communication is trusted by the consumer to make a purchasing decision. From the perspective of credibility perception of communication tools, the following forms are decisive.

Table 3: Identification of factors that induce consumer's trust

The form of marketing communication	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
TV advertising	0.18	0.683		0.231	
Point-of-sale advertising	0.411	0.488		0.624	
Sales promotion - discount, multipack, etc.	0.156	0.176	0.13	0.703	
Consumer discussion forums on the Internet	0.384		0.757	-0.116	
Blogs on the Internet	0.155	0.214	0.691	-0.314	
Press – magazines, newspapers	0.29	0.617		0.161	
Posters, leaflets, catalogues	0.46	0.532		0.143	
Recommendations and references	-0.221		0.624		
Billboards, city lights and OOH carriers	0.577	0.331		0.221	0.197
Facebook, social networks, social media	0.602	0.348	0.178	-0.113	
Product presentation, tastings		0.143	0.481	0.328	0.147
Advertising on the Internet	0.671	0.174		0.271	0.127
Shop employees	0.343	0.184		0.316	0.264
Company website	0.678			0.104	0.112
Direct branding through the media	0.19	0.563			0.461
Teleshopping, direct sale		0.606			0.304
WOM	-0.118		0.482	0.217	
Other forms of mark. communication - creative	0.309	0.25	0.163	0.122	0.809

Source: Own processing, 2019

Table 3 shows that the Slovak consumer most often trusts the following forms of marketing communication:

- factor 1 – online communication;
- factor 2 – ATL communication;
- factor 3 – reference groups;
- factor 4 – point-of-sale communication;
- factor 5 – non-standard/creative forms of marketing communication.

As the amount of the time consumers spend on the internet grows each year, it is possible to identify the impact of digital technologies and online communication on their behaviour. The stated fact relates mainly to purchasing consumer goods, in which consumers consider online communication as the most trusted communication channel. The second factor implies that the standard communication channel, through advertising in

mass media, is still up to date and consumers trust it. The third factor identifies the significant impact of reference groups on shopping behaviour. When purchasing everyday goods (especially goods of ecological nature), the consumer searches for references that relate to the satisfaction parameter in alleviating post-purchase dissonance. Another factor is the point-of-sale communication. The stated factor suggests that the consumer is subject to communication activities directly while making the purchase (this applies mainly to everyday goods). The last factor indicates that creativity in marketing communication significantly affects the consumer's trust. It can be assumed that non-standard forms of marketing communication affect consumer behaviour at the subliminal level, while spontaneous acquisition of the communicated message and subsequent natural influence in the purchasing process take place.

In our research we also examined the impact of marketing communication on the purchase, as trust in a communication tool does not necessarily affect the purchase directly in the store, or on the Internet.

In relation to impact parameters, we have identified three key factors that influence consumer purchasing behaviour:

- factor 1 – point-of-sale communication;
- factor 2 – presentation of the sales offer;
- factor 3 – creative form of communication aimed at direct addressing.

The factors suggest that marketing communication aimed at affecting purchasing behaviour should act at the point of sale as the consumer often decides at the moment of making a purchase (the stated applies mainly to purchasing everyday goods). In the process of choosing the retailer, on the contrary, the presentation of the offer based on leaflets or outdoor advertising plays the key role. Lastly, there's another significant, and currently creative, form of communication based on addressing the consumer directly via social networks.

Other research focused on the Generation C subsegment in which we examined the influence of marketing communication on purchasing behaviour. 201 respondents took part in the research. The gender of the respondents was roughly balanced, with women constituting 51.7% of the respondents and men 48.3%. More than 60% of the respondents fell within the age range of 15 – 45 years of age. Only 32.3% of the respondents were university educated, mostly living in cities in Slovakia.

Following the previous research, there was also carried out investigation of notions about consumer behaviour of the Generation C (Generation Connected) in relation to marketing communication. Fundamental questions were of closed character and were evaluated by the form of a simple or multiple choice or assessment in the form of Likert scale.

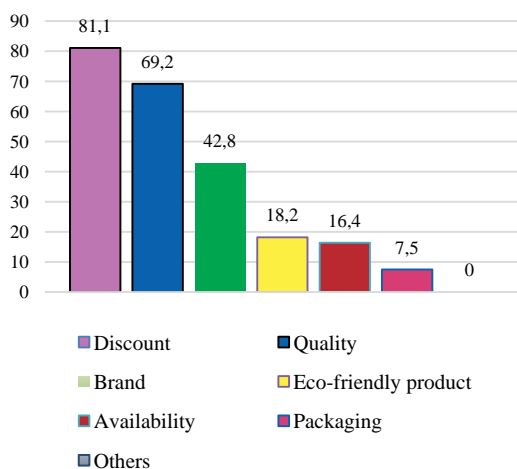
The aim of the research was to find out following:

- if marketing communication has an impact on purchasing decision-making of respondents;
- what factors influence most often their purchasing behaviour;
- which tools of marketing communication have a significant impact on purchasing behaviour.

The results showed that more than 90% of the respondents believe that marketing and marketing communication have an impact on purchasing decision-making process, while out of that 62.7% of respondents denoted this impact as partial and almost 30% expressed an absolutely affirmative stance to the perception of the impact.

Picture 1 refers to the fact that respondents denoted as the most important factor discount, or price appeal, followed by the quality of the product and the next position was taken by the factor of the brand. An interesting finding is that the factor of

ecological suitability of the product appeared in higher frequency than the factor of availability of the product. On the basis of the result we may state that the price is still a key factor in influencing decision-making process, and at the same time quite clearly cast doubt upon the paradigm that the packaging can sell.



Graph 1: Factors influencing purchasing decision-making
Source: Own processing, 2019

Through further investigating we wanted to find out which communication tools and to what extent have an impact on consumers of the Generation C in the purchasing decision-making process. After having evaluated the frequency of occurrence of individual levels of the scale we may state that respondents have still been influenced in a significant way by techniques of the sales promotion tool, thus gifts to the purchase together with presentation of the products and degustation and advertising at the point of purchase. These were proved also in the previous research. From the tools of PR an important impact have websites and the lowest influence can be seen at traditional forms of advertising (print, radio and outdoor advertising). The lowest extent of impact is represented by direct addressing by means of a phone or e-mail. We can suppose that this state is caused by certain distrust of consumers towards these forms, which is a result of common unpleasant experiences coming exactly from these communication channels. However, what we found amazing was that we expected that majority of these respondents would be influenced by communication on social networks just because these are “connected consumers“. Research on the given sample did not prove this and it pointed to appropriate impact on purchasing decision-making on the basis of advertising on social networks and in the online environment.

Table 4: Impact of marketing communication tools in decision-making process

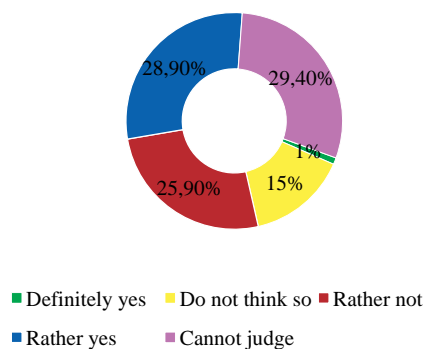
	No impact	Low impact	Appropriate impact	High impact	Total impact
Advertising on TV (commercials, teleshopping)	16.9 %	23.4 %	46.8 %	6 %	7 %
Advertising in cyberspace	11.4 %	27.9 %	38.8 %	14.9 %	7 %
Advertising on social networks (Facebook, Instagram, YouTube)	19.9 %	27.4 %	33.3 %	12.9 %	6.5 %
Outdoor advertising (billboards, panels)	36.3 %	30.3 %	17.9 %	15.4 %	0 %

Advertising at point of sale (in shop)	10 %	23.9 %	29.4 %	35.3 %	1.5 %
Print advertising	23.9 %	40.3 %	16.4 %	17.9 %	1.5 %
Radio advertising	46.8 %	17.9 %	22.4 %	12.9 %	0 %
Information brochures	22.4 %	34.8 %	27.4 %	10 %	5.5 %
Gift to purchase	8.5 %	23.4 %	21.9 %	26.9 %	19.4 %
Presentation of products and degustation	9.5 %	18.4 %	29.4 %	25.4 %	17.4 %
Loyalty programmes	16.9 %	23.9 %	31.8 %	18.9 %	8.5 %
Catalogues, leaflets	9.5 %	22.4 %	33.3 %	22.9 %	11.9 %
Direct addressing (phone, e-mail)	51.9 %	21.4 %	15.4 %	8.5 %	3.0 %
Website	18.9 %	24.4 %	19.4 %	31.8 %	5.5 %
Events	28.9 %	22.4 %	22.9 %	11.4 %	14.4 %
Bloggs, reviews, customers fora	24.4 %	16.9 %	26.4 %	17.9 %	14.4 %
Employees in shop	8.5 %	23.4 %	28.9 %	27.9 %	11.4 %

Source: Own processing, 2019

In one of the questions we found out that the most important advantage for respondents is the possibility to search information on the Internet, because the cyberspace is for Generation C in majority of cases communication means and source of information. A significant value reached factors related to the possibility of comparing prices, the option to return a product and possibility to purchase online from the comfort of the home. Less important factors showed a choice to have a look at a product before its purchase on a video and monitoring the state of order after having bought it.

A relevant question of the research was the monitored attitude of the respondents to the perception of changes in their consumer behaviour due to the impact of marketing communication activities. We were interested in the opinion if marketing communication activities alternate decision-making of consumers when buying products.



Graph 2: Impact of marketing communication activities on decision-making process in purchasing
Source: Own processing, 2019

The results are relatively identically laid out. Almost 30 % of the respondents cannot say if marketing communication activities change their purchasing decision-making, however, nearly further 30 % of respondents believe that these activities have an impact. More than one quarter of the respondents have a more sceptical view on this influence and they say that communication activities rather do not affect them. It is interesting that only 1 % have an opinion that communication activities do not exert any influence on their decision-making process.

4 Conclusions

The results of the research, out of which only several data were selected for this paper, showed that the influence of marketing communication on consumer behaviour is significant. Over the last years, forms and tools of marketing communication, along with preference attributes in retail, stay practically unchanged, which was for example proven by both researches that the price discount and the origin, or composition of the goods reach the highest preferences.

When we monitor changes in consumer behaviour in interaction with marketing communication, then we find out that especially the generations of millennials (Generations Y and Z) are affected to a large extent by marketing communication carried out on the Internet and social networks (Lampropoulos, Siakas, Anastasiadis, 2019). Although they use these media more than just a source of information, they realize their purchases in physical shops, while monitoring online brands or retailers, at which they buy in person.

Changes in marketing communication, which are also caused by technological progress, take a significant part in forming consumer behaviour. It is undisputable that continuity of changes provokes new alternations not only in marketing, but also in purchasing and decision-making processes. In our times, consumers are hard to please, demanding from the brands to be constantly innovated and be exposed to creative communication (Mura, Slezziak, 2015; Lewandowska, Stopa, 2019), which is especially true for the Generation C.

A trend of marketing communication in online space is to arouse a controversy based on the conviction of the consumer to buy a product, which can be obtained on the basis of 4 phases. According to Piatrov (2019), this model is denoted as STDC, (See – Think – Do – Care). The stage of “see” ensures presenting the product to a potential customer; the phase “think” supports the consumer thinking about the product, e.g., looking for information on the product, comparing prices; the stage “do” has to convince the consumer to buy a product, to which online forms of marketing communication significantly contribute. The final phase “care” represents repeatedly addressing of existing customers in the endeavour to ensure positioning and creating loyalty. This stage is important because it makes a value of customer for the company. Basically, this approach is innovative, because it shows the right view on the communication with customer, who expects from a brand more than just an active sale, however, at the same time, they calculate with the fact that it is multiply cost-effective to address and maintain already existing customers that to build relations with new ones.

Trends in purchasing behaviour represent for marketing experts several challenges to face. The first one is to monitor ongoing changes, the second one to make products and services corresponding with alternating consumer values and the third one is to create communication which is a reflection of values of people on different target markets and on these values to build a brand.

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ON THE NECESSITY OF THE ACTUALIZATION OF SOME PROVISIONS OF MODERN ECONOMIC THEORY

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Abstract: Modern economic theory is still at the stage of formation of its own methodological base. However, some achievements of economic theory already require a constructive revision. The reasons for the necessity to revise the provisions of modern economic theory are identified by the authors. Each of the reasons noted herein is convincingly singled out in a separate methodological problem. Using the Heckscher-Ohlin theory (theorem) of international trade, it is shown that a formal approach to the economic research processes, which is encouraged by some criteria for evaluation of the "scientific nature" of the research, ultimately draws the economic science from the relevance in the research. Subjectivity and schematism (which in many cases takes into account a far from complete list of the essential characteristics of social and economic systems or the processes taking place in them), which, as a result, leads to distortion and falsification in assessment of the available facts, are also attributed herein to the reasons for the low relevance of the economic research results. The imperfection of the methodological base of modern economic theory results in the need for additional studies of the epistemological adequacy of the use of mathematical instruments in economics. The necessity of application of the interdisciplinary approach in economic research is shown. From the methodological point of view, the reasons for the need to revise some of the provisions of modern economic theory identified herein will increase the relevance of such provisions after their transformation by way of solving the problems stated.

Keywords: economic theory provisions, interdisciplinary approach to economic research, reasons for the necessity to revise some of the modern economic theory provisions, social and economic systems/processes.

1 Introduction

The trade wars, social cataclysms and economic crises that have become more frequent in recent years in the world community have led to the need to revise their mechanisms and causes. However, most of the existing theoretical approaches to the explanation of the nature of the processes taking place in the economy and society at this point cannot solve the problems noted above.

The need to revise the existing conceptual foundations of modern traditional economic theory emerged under the pressure of factual material, accumulated in the 21st century, which has no relevant explanation in modern economics. Unfortunately, so far, it has no universal conceptual apparatus for an adequate description of most of the social and economic systems and processes and, therefore, it is still unable to give practical recommendations on the choice of the path of their further development. According to Kaluzhsky, the problem of modern economic theory lies in the absence of a coherent system methodology for studying social and economic processes [1].

2 Methods

The problems of modern economic theory cannot be explained by the fact that social and economic systems are characterized by the non-linearity of their development, determined by a significant dependence on reasonable variation of initial conditions, the presence of alternatives in the paths of their development and the possibility of choosing from such alternatives within the current constraints of technological, institutional, resource nature. At the same time, the choice itself and the criteria for choosing the optimal path of development of a social and economic system from the great number of existing

alternatives are quite a difficult task, which often does not have a single solution. Moreover, as a rule, this decision-making process itself largely assumes the nature of a heterogeneous and heteromorphic subjectivity [2].

Investigating the factor of subjectivity in economics, and comparing this field of knowledge with physics, the famous physicist Bouchaud writes: "The applied results of the economic sciences are disappointing ... What are the achievements of the economy, apart from its inability to predict and prevent crises? ... Of course, according to Isaac Newton, it is much more difficult to simulate people's madness than to simulate the movement of the planets. But there must be statistical patterns in the behavior of a large number of people, like the ideal gas laws arising from the chaotic movement of individual molecules" [3]. In this quotation, Bouchaud illustrates, among other things, the mainstream of modern economic theory: an attempt to scale the existing factual material to fit the existing theoretical principles.

The economic theory is based on too strong assumptions, which for some reason quickly become axioms (for example, rational behavior of economic agents, the "invisible hand", market efficiency), despite the fact that most of these "axioms" do not withstand the testing by practice [3].

The plausibility of the above assertion on the low adequacy of the achievements of economic theory to the relevant needs of practice is also confirmed by the opinion of Polterovich, who argues that most of the existing methodological approaches in economics are identified as untenable in practice [4]. Discussing the limitations of modern economic theory, Polterovich writes that, although economic theory performs useful functions by creating the instruments for understanding reality, it is not always possible to use this tool constructively [4].

The conclusions made above [5] are supported by the following considerations:

- a significant number of scientific results of economic theory are often not supported by practice, which indicates the incompleteness or inconsistency of its initial provisions and basic models;
- most of the available research results turned out to be sensitive to reasonable variations of the initial theoretical hypotheses;
- quite often the revealed empirical patterns are not confirmed, and, on the contrary, are refuted by their further approbations.

Despite the undoubted achievements of economic theory, it is experiencing a methodological crisis, resulting in the necessity to revise its goals and to change the organization of economic research [4].

Leishvili went further in his conclusions: "it is becoming more and more obvious that not only the individual provisions, but the mainstream paradigm of economics requires the fundamental revision" [6].

Indeed, the evolutionary processes in the economy and society from time to time lead to the need to revise the existing theoretical concepts. This is due to the fact that most of these provisions were proposed at a certain level of technological development and under certain institutional constraints. But over the past decades, technology has advanced a lot, and institutions have transformed, which inevitably leads to moral obsolescence of most of the existing provisions of the social and economic sciences.

As can be seen from the above, so far there are many problem areas in the relevant provisions of economic theory. The definition of the causes of the untenability of some existing

economic theory provisions determined the direction of the research conducted in the work.

3 Results

Considering the problems of modern economic theory, it is necessary to dwell on the reasons for the need to revise its achievements from the relevant positions of practice. Several epistemological reasons are identified by the authors.

Reason 1. The evolution of theoretical views on the process under study or the event in the economy under the influence of new practical experience data: new empirical material, which is not consistent with the existing norms of economic theory, is accumulated over time in the economy.

"The economists were eager to "explain" the economic events as they are" [7], without taking into account the evolution of the achievements of science and practice. But modern scientific, technical, technological and institutional achievements in the practical activity of society resulted in the need to revise the existing "axioms" of economic theory.

Nobel laureate in economics Allais writes the following about the neglect of the evolutionary processes in society in the economic research: "In economics, as in any other science in each era, many positions often seem well established, and the postulates, on which they are based, acquire over time something like metaphysical holiness. Some theories, the fundamentals of which are at least controversial, are represented as proven truths. And their so-called perfection is never questioned anywhere, no one takes into account the facts that do not fit to the framework of these constructions" [8].

Davar also noted the need to revise the provisions of economic theory in accordance with the development of the real economy (the progress of human society) in such a way as to ensure the actual relationship between the theory and the real economy [9].

Many existing "axioms" of traditional economic theory are criticized convincingly and in sufficient detail (from the standpoint of modernity) [10]. Among the most well-known "axioms", reasonably criticized by Blaug from a methodological point of view, the following are worth mentioning: Walras's general equilibrium theory, Samuelson's revealed preferences theory, Lancaster's consumer characteristics theory, Machlup's company theory, the Heckscher-Ohlin international trade theory (theorem), Friedman's "natural" level of unemployment theory [10-17].

The Efficient Market Hypothesis (EMH) is widely used as such an "axiom" for urgent financial markets. The following most famous models using the EMH as a methodological basis are worth noting: Sharp's CARM (Capital Asset Pricing Model), APT (Arbitrage Pricing Model), Markowitz's effective portfolio theory, the Black-Scholes model for predicting the prices of derivatives [18-21]. The reasons for untenability of the EMH are considered in detail in [22].

But, if the axiomativity of the EMH, as the methodological basis of the models noted above, is reasonably criticized from the standpoint of modern practice [23], then the models themselves cannot be considered as an adequate tool for analyzing and forecasting market processes.

Let us consider in dynamics the mechanisms for the emergence of the need to revise the "axioms" of economics by the example of the Heckscher-Ohlin international trade theory (theorem) [15, 16].

According to Heckscher and Ohlin, the substantive essence of this "axiom" is the following: "the countries are not equally endowed with the factors of production – labor, land, and capital. Such differences determine the prices of these factors in relation to the production of a particular product. If a country is provided in abundance with one of the production factors, for example,

with labor, and, accordingly, it has a lower price, then in this country the goods, the production of which requires the factor, existing in abundance, in this case, the labor-intensive goods, will be cheaper. In the countries with an abundance of capital, the capital-intensive goods will be cheaper. In this regard, it is advisable for the countries with a surplus of cheap labor to produce and export the labor-intensive goods, while the countries with free capital but no surplus labor should specialize in the production and export of the capital-intensive goods and import the labor-intensive goods from abroad" [24].

According to Lindert: "The goods that require significant costs for their production (surplus production factors) or, on the contrary, insignificant costs (deficient factors) are exported in exchange for the goods produced using the factors in inverse proportion. Suchwise, the surplus factors are exported and the deficient factors are imported in the hidden way" [25].

At the end of the first half of the twentieth century, Samuelson showed (based on an analysis of the time period following the Great Depression in the USA, marked by the rapid development of transnational trade and, as a result, the changes in the international institutional system that determines the dominant international trade relations) that the international trade mechanisms influence the prices of production factors, which made an additional "contribution to the development and refinement of the Heckscher-Ohlin theory (model); therefore, it is sometimes called the Heckscher-Ohlin-Samuelson theorem. Samuelson proved that in the process of international trade there is an equalization of prices of production factors" [26]. Although Stolper and Samuelson did not directly indicate the influence of institutional mechanisms in international trade on the equalization of prices for production factors, nevertheless, the conclusions made the existence of such an influence clear [27].

In the 1950s, Leontief (based on the analysis of the time period following the Second World War, when the United States became the international trade leader), "during the study of the commodity structure of US foreign trade in the 1950s, revealed a trend that, contrary to the Heckscher-Ohlin theory, the US exports were dominated by relatively more labor-intensive goods, while the imports were dominated by capital-intensive goods. This result became known as "Leontief's paradox" ... It turned out that export goods required significantly more skilled labor than import commodities" [24]. According to Leontief, this paradox can be explained by the presence of institutional restrictions in international trade in the face of protectionism of American goods [28, 29].

In 1976 (based on an analysis of the cold war period, when the rapid development of technologies was supported by the arms race), Gablisch noted that the provisions of the Heckscher-Ohlin theory disregard the influence of technological changes on production and trade under the conditions of the scientific and technological revolution, as well as the economies of scale, in which the increase in production of goods leads to a reduction of the production costs, consequently, to a decrease in the net price [30].

Some weak points of the Heckscher-Ohlin theory were also revealed by Seltsovsky: "Firstly, this theory does not take into account the international mobility of production factors, but proceeds from the unlimited mobility of production factors only within the country ... In fact, recently the international movement of production factors is increasing, which is especially evident in the international movement of capital and labor. As for the unlimited mobility of production factors within the country, on which the Heckscher-Ohlin theory is based, here, on the contrary, in some cases the internal mobility of production factors is complicated. For example, the movement of labor within a country in an industry with higher wages, determined by world prices for the products of these industries, is often difficult due to problems with housing, social infrastructure, transport, etc. ... Secondly, the Heckscher-Ohlin theory assumes absolute competition and duty-free trading. In fact, as is well known, the international trade policies (tariffs, quotas) and other

protectionist barriers that increase the price of a commodity and impede its entry into international markets are widely used in international trade" [24].

The findings of Seltsovsky are based on the analysis of the achievements of the beginning of the 21st century, which is characterized by the development of transnational corporations and trade wars, determining the transformation of a system of factors (including the institutional ones) that affect the international trade processes [24].

As can be seen from the summary of the processes of revision of the adequacy of the Heckscher-Ohlin international trade theory (theorem), under the influence of the accumulated empirical material in the economy there was a transformation of theoretical views on the list and the importance of the factors affecting the mechanisms of international trade.

It should be noted that there were a lot of other attempts to make changes in the provisions of this "axiom" in the history of revision of the Heckscher-Ohlin international trade theory (theorem). Of these, the Stolper-Samuelson theorem, the Rybczynski theorem, the dynamic three-factor model of Jones should be mentioned at least [27, 31, 32]. But these attempts, as a rule, made technical changes (mainly an increase in the number of countries and factors considered in the model, as well as refinements in the used mathematical apparatus) within the Heckscher-Ohlin paradigm, and did not consider the problem in a complex, from the position of a systematic approach.

In the authors' opinion, the revision process of the considered Heckscher-Ohlin "axiom" will be continued. It is due to the fact that the emergence of new technologies (for example, blockchain) can lead to the transformation of the global financial system, as shown [33], which, in turn, will open new horizons for the revision of views on this "axiom".

The hypothesis of the epistemological importance of such retrospective studies of the genesis of the existing economic "axioms" using the achievements of the history of economic theory is confirmed [7, 34].

Reason 2. A formal approach to economic research processes, which is encouraged by some criteria for evaluation of the "scientific nature" of the research, which, ultimately, leads economics away from relevance in research.

According to Leontief, the imbalance in the mechanisms for assessment of the scientific significance of the results of American research in economics led to the fact that "the preoccupation with the imaginary, hypothetical rather than observable reality gradually resulted in a distortion of the informal rating scale, which our academic community uses to evaluate its scientific activities of its members. According to this scale, empirical analysis valued less than formal mathematical calculations" [35].

Similar problems can be observed in the modern Russian scientific and economic community [36, 37].

Reason 3. Subjectivism (first of all, the subjectivism of the researchers themselves [10]), schematism (which in many cases takes into account a far from complete list of the essential characteristics of social and economic systems or the processes taking place in them), which, as a result, leads to distortion and falsification in economic research.

An example of a schematic approach is the use of the term "rationality" in theoretical constructions as applied to decision-making processes in economics. Thus, investor rationality is one of the keystones of EMH construction, the review of which has been considered [22].

Reason 4. The weak development of the principles for the selection of source data and the problem of the adequacy of the choice of the applied mathematical instruments in economic

research, which, as a rule, leads to irrelevant results of such research.

This problem requires a separate in-depth study and will not be considered in detail herein.

Reason 5. The immaturity of cognitive instruments (research instruments) in the economy. Modern methodological approaches using the mechanisms of system analysis, chaos theories, fractals and synergy achievements are firmly included in the list of instruments used in economic research. However, the toolset approved in practice, which takes into account the specific methodological features of these approaches, as well as the identification of limitations in the mechanisms of their application, is still under development.

4 Discussion

Moreover, modern achievements in economics lead to the need to study social and economic systems and processes at an interdisciplinary level to increase their adequacy [38]. The lack of interdisciplinarity in economic research leads to the fragmentary nature of its theoretical provisions [39]. At the same time, the consistency of science is lost.

The nature of the fundamental problems of social reality, such as the functional structure of society, the organization of individual spheres of social reality, the structure and mechanisms of social interactions, the biological and psychological foundations of social activity and social interactions were studied rather deeply in the framework of individual specialized social sciences – psychology, sociology, political science, history. However, a significant amount of available theoretical developments, concepts, approaches and a huge array of empirical data in the social sciences and related fields still require a unified theoretical and methodological paradigm.

Due to the lack of a holistic perception and understanding of social processes, it is impossible not only to tie together the existing theoretical developments and to understand the accumulated empirical material, but also to solve numerous fundamental problems of modern social reality, such as crime, social deviations, gender and sexual equality, contradiction of personal rights and state interests [40].

For more information on the need to use an interdisciplinary approach in economic research, see, for example [10].

5 Conclusion

Surely there are a number of reasons for revision of the existing "axioms" and other achievements of economic science under the influence of accumulated relevant empirical material (primarily institutional, technological and behavioral).

For example, the institutional constraints that significantly affect the current content of the "axioms" also transform over time. This, in turn, can also serve as a reason for revising the existing provisions of economic theory.

But it is the subject of additional research, not included in the objectives of this work.

Summarizing the above, it can be concluded that the solution of large-scale, fundamental problems of society lacks the required methodological basis [41].

The additional studies, taking into account the above-mentioned reasons, will be able to contribute to the formation of a relevant methodological basis for the transformation of the existing provisions of economic theory in order to improve their relevance.

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Primary Paper Section: A**Secondary Paper Section: AH**

LINGUISTIC LANDSCAPE AND READING COMPREHENSION IN FOREIGN LANGUAGES TEACHING

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Abstract: The submitted paper deals with the linguistic landscape (in German: *sprachliche Landschaft*). We are interested in its didactical potential and the possibility of using in foreign languages teaching (especially in reading comprehension) in pregradual education of future foreign languages teachers and its implication into lessons at the primary and secondary degrees of education. Theoretical base is supplemented with the examples of teaching techniques for the work with linguistic landscape.

Keywords: linguistic landscape, foreign languages teaching, reading comprehension, practical examples

1 Introduction

Multimodality and multimediality are typical features of today's period. These features interfere in all aspects of human activities. Multidimensional communication became an obvious part of our life, and visual communication plays more and more important role. The importance of modus "image" grows as never before and plays a significant role when perceiving and reflecting facts and events around us. Visual reality is exposed to people not only primarily (by letters, words, different symbols or objects), but also secondarily, when visual interpretations of all types intermediate directly or indirectly the content.

There is an immense number of static and dynamic images around us. We perceive them, then we select our perceptions and consequently we process them on the base of our previous experience (of our own experience or mediated ones), knowledge and on the background of the influence of external factors of social and cultural contexts of our region. Transmigration is one of the characteristic phenomena of today's society, due to the opening of frontiers, free movements of individual people among the European Union states, migrant transfers etc. It is natural that there are many multiple forms of languages on information boards, institutions, shops or hotels in any country. Sometimes it is not obvious at the first sight what the origin of linguistic signs is.

2 Linguistic landscape

Before we pay attention to the function and use of linguistic landscape in foreign languages teaching and we present reflections and solutions of the contact of linguistic landscape when training reading comprehension, we discuss it as a phenomenon of (not only) nowadays, as well as professional paradigm, with which the research deals in several scientific areas.

Objects of the study of linguistic landscape, so-called linguistic landscape forum, are linguistic signs of public space of certain area, region, district or street, which inform about a producer, as well as a recipient of the sign (comp. Lauková/ Molnárová, 2020, p. 97). Through the linguistic landscape (LL), the language in public places extends general language use – it offers the language of migrants, expresses language authority and language policy of studied area, reflects the presence of several languages. LL becomes a point of intersection of social and cultural contexts and language policy context, because social, cultural, language, and political contexts, in which the sign originated, are highlighted, too. It follows from the above-mentioned that LL reflects social dynamics and society openness, and it is a source of symbolic appreciation of social

and ethnical diversity¹. No sign originates without any incentive – titles, graffiti, boards are always more than just titles, graffiti or boards. The signs have their physical form: of sound, image or object in public space. They are static or mobile, written or symbolic, and present certain message to their recipients (Fig. 1, 2, 3, 4). Through the message of these signs, we approach the process of their creation, which has its sense and even overgrows the message itself (comp. Backhaus, 2007, pp. 4 – 11). The signs deepen and broaden knowledge of generally routine language use. This way they fulfill two basic functions: informative and symbolic.



Fig. 1



Fig. 2



Fig. 3

Fig. 4

2.1 Historical excursion

The area of linguistic landscape (LL) is a new research area that offers impulses of visual interpretation of a language in the form of street signs, commercial shop signs, different institutes, billboards or posters, which can be multilingual. LL develops more dynamically in the context of multilingualism (Lauková/ Molnárová, 2020, p. 98).

In 1997 Landry and Bourhis defined a basic concept of LL in the following way: "The language of public road signs, advertising billboards, street names, place names, commercial shop signs, and public signs on government buildings combines to form the linguistic landscape of a given territory, region, or urban agglomeration" (Landry / Bourhis, 1997, p. 25).

The attention is aimed mainly at linguistic signs in public space. According to Ben-Rafael they are "any written signs found outside private homes, from road signs to names of streets, shops and schools" (Ben-Rafael/ Shohamy/ Barni, 2010, p. 14).

The LL research is focused on the occurrence and functions of different languages in a chosen urban location, and their quantitative and qualitative analysis. The question of languages selection, their perception and relations to other symbols, as well as other languages from the aspect of the relations of power and position of different language groups in a society, becomes important.

Research results were published in proceedings related to this topic (Gorter 2006, Shohamy/ Gorter 2009, Jaworski/ Thurlow 2010, Gorter/ Marten/ Van Mensel 2012, Marten/ Saagpack 2017, Badstübner-Kizik/ Janíková 2018). While the first proceeding discussed a new approach to multilingualism (Gorter, 2006), the following proceedings showed broad range

¹ ANDROUTSOPOULOS, Jannis: Linguistic landscapes: Visuelle Mehrsprachigkeitsforschung als Impuls an die Sprachpolitik. [online] Available at <<https://jannisandroustopoulos.files.wordpress.com/2011/05/j-a-2008-linguistic-landscapes.pdf>>. [cited on 2020.30.05]

(Shohamy/ Gorter, 2009, Marten/ Saagpak, 2017). Papers from the proceeding of the authors Jaworski and Thurlow (2010) were aimed at semiotic landscape and dealt with multimodal character of language. The proceeding of the authors Badstübner-Kizik and Janíková (2018) was focused on the perspectives of methodology of languages, culture and literature (2018).

From the first reflections on LL in the context of multilingualism (Landry/ Bourhis, 1997), the area of research of LL (which was initially concentrated on social and linguistic aspects) was extended by other disciplines and was studied in relation with the economics, political sciences and tourism in interdisciplinary studies (Marten/ Saagpak, 2017). Following the first quantitative research projects, quantitative as well as qualitative research methods were used. The stories behind the signs are studied; language practices of involved persons and ethnographic research strategies are used, too. Monographs and studies oriented on one place or part of a town are written (Saalem, 2017, Hyriaková², Ferenčík³), using different methods to obtain and process. Comparative studies are created, too (Saleem, 2017, Marten/ Saagpak, 2017, Badstübner-Kizik/ Janíková, 2018).

3 Linguistic landscape in school context

The orientation on language and contextual knowledge and on the interaction between a recipient and a sign allow applying LL in teaching to larger extent. In the first phase, there is a written form of language in public places and spaces as notice boards, labels, posters etc. We must take into consideration that public space and its signs are moved into half-public space that is clearly bordered, e.g. school building, school area or canteen. Even a private space opens successively through the study of notifications, announcements, boards next to the entrance doors, on gates or fences of private area (comp. Ferenčík, 2014). Tattoos, postcards or skinscapes are the part of LL, too (comp. Kimpel 2008, Jaworski 2010). LL as an object of the study is, due to the social changes, more and more multimodal. It relates not only to language itself, but also to the variety of phenomena of public, semi-public or even private spaces. The question is to what extend the study of LL in private spaces (*linguistic homescape*) corresponds to LL definition and it opens possibilities for new discourses. Announcements at the stations or students' interactions in open or semi-open spaces (in classrooms at breaks, in a canteen etc.) are studied. They are studied also in virtual communication space of a computer (comp. Androutsopoulos 2008, Ferenčík 2013).

LL in a school context represents a relatively new way of research and offers new possibilities for working with linguistic signs:

1. Students can discover new forms and functions of language, besides their common space of school; they can think about them, observe them and pay them attention.
2. Analysis of linguistic signs has a positive effect on learning and it helps so-called "incidental learning".
3. LL offers possibilities of critical reflection and thorough critical analysis of function and form of a language, language register and/or language varieties. Students focus on reflection of different dimensions of standard linguistic signs (social, psychological, symbolic etc.). They learn to work critically with linguistic signs.
4. Students acquire knowledge of language multimodality and of its multimodal way of use.

Critical reflection of form and function of linguistic signs in public space brings significant methodological potential because it supports learners' individual linguistic awareness.

² Hyriaková, Kristína: Jazyk a mesto: angličtina v jazykovej krajine Paríža. 2012. online: <https://www.pulib.sk/web/kniznica/elpub/dokument/Olostiak4/subor/Hyriaková.pdf> [cited on 2020.30.05]

³ Ferenčík, Milan: Jazyk v meste. Angličtina vo vizuálnej semiotike mestskej jazykovej krajiny. <https://www.pulib.sk/web/kniznica/elpub/dokument/Bocak4/subor/Ferencik.pdf> [cited on 2020.30.05.]

Linguistic awareness is a sum of ideas, experience and knowledge of a language, i.e. of its structure, elements and rules of use etc. It is an ability to distinguish what is correct and appropriate in a specific discourse and what is purposeless and incorrect. We distinguish social (or national) linguistic awareness, which is continuously formed in a certain language community. On its base individual members of the community form their own (individual) linguistic awareness. Individual linguistic awareness is affected by social linguistic awareness through the discourses in media or literature, as well as education process at schools and education in families etc. When creating individual linguistic awareness, the important role is played by individual abilities to accept, classify and use all information we receive passively (e.g. in a process of communication, when listening to discourse and reading) and actively, i.e. by studying. Due to good linguistic awareness, we are predominantly able to react and communicate appropriately⁴. In education discourse, LL is received as a medium in foreign languages teaching and a means to support linguistic awareness (comp. Janíková 2018, pp. 141 – 143) and obtain linguistic awareness diversity. As a practical example, the following task can be mentioned: Learners take photographs of all linguistic signs in their surroundings. Consequently, they interpret them, ask questions, appreciate different languages, and deduce their value, producers and receivers. Thus, their awareness for social function of language is increased and their own language identity is strengthened.

Advantages of the work with LL and its use as a pedagogical tool can be visible especially in these areas:

1. Support of critical reading abilities;
2. Improvement of pragmatic competence as one of communication linguistic competences;
3. Extension of possibilities to learn language outside the classroom;
4. Obtaining multimodal literary abilities;
5. Sensibilisation to language connotations;
6. Support of communication linguistic competences (language, sociolinguistic and pragmatic) and language skills (reading comprehension, speaking, writing).

LL offers mainly more focused perception of multilingualism, language diversity awareness, critical linguistic awareness and communication competence.

3.1 Linguistic landscape in foreign languages teaching

The concept of LL has entered foreign languages teaching in recent years. It is related to the interdisciplinarity, which became a part of the characteristics of methodology of foreign languages as a confirmation of inevitable openness to other scientific disciplines (sociology, sociolinguistics, psychology, pedagogy etc.). This is how its specific areas are enriched and deepened with new knowledge and research of the mentioned scientific disciplines.

After the brief characteristics of LL (Chapter 1), its methodological potential is going to be discussed. Our attention is focused on the following questions:

1. How can be LL implemented into foreign language teaching?
2. How can LL help when training reading comprehension?

It is important to mention that language and contextual knowledge and experience of a recipient are very often necessary in LL in order to decode the stories behind the signs or define the relations among the languages and identify their geographical place. They are stories about historical, political and social milieu of certain space. Linguistic landscapes enter into interaction with a recipient and they think: What do I feel when I meet these languages? Am I able to decode their

⁴ <https://jazykovaparadna.sme.sk/q/7501/#ixzz5yg1FaLul> [cited on 2020.30.05]

message? Do I want to be in this region or country? The question is how the concentration to language and contextual knowledge and experience behind the sign and concentration to interaction between a recipient and a sign can be used in foreign languages teaching.

Implementation of LL and methods for the work with LL (*linguistic landscaping*⁵) in pregradual education of future teachers of foreign languages and in school teaching creates a platform for systematic and continual work with the use of regional particularities. At schools, the work with LL supports strongly relations among subjects. It is the work with visual data, which are around us in real, as well as virtual world. General sensibilisation of learners to semiotic structure of the place where they live is supported by critical reflection of semiotic landscapes. A teacher can help learners to create their own visual linguistic landscape in a class or in a campus. This way dynamic and various creations originate.

Project work (foreign language in association with other subjects) is suitable for the work with LL for the following reasons: Learners become researchers and they feel like experts. They communicate, search for information, classify found signs according to the given criteria, discuss their meaning and draw conclusions. Stories behind the signs are more complex capture of several important aspects.

The second form of work with LL, *individual work*, is very specific and concentrates on the search for signs in the surroundings, e.g. at home, in a contact with family members or friends (*linguistic homescape*). It presupposes certain degree of autonomy in searching for linguistic signs and their classification and assessment. Learners feel happy about their own discovery, and their linguistic and ethnic awareness is supported.

3.2 Linguistic landscape and reading comprehension

When training reading comprehension, selected phenomena of LL can support development of this skill by connecting language and contextual learning with learner's knowledge and experience. It has a motivation effect on a learner and at the same time, it supports the development of individual linguistic awareness. The work with LL allows to change and train different reading styles (global reading, skimming, scanning and intensive reading) according to the aim of a task. When choosing the LL phenomena we can plan and implement complex tasks individually or like a project work.

We propose several areas of empiric research that are suitable for different levels of education:

1. Multilingualism on the menu;
2. Selection and order of languages on notice boards and on facades of houses, restaurants, shops, cafés, hotels;
3. Information in cafés, shops and other public places;
4. Information on stickers, posters, travel guides;
5. Linguistic and symbolic interpretation of graffiti in private and public places (Fig. 5).



Fig. 5

We propose the following steps: Firstly, separate obtained data into individual categories, then select 3 – 5 key signs and describe them. Secondly, try to explain the story behind each

sign. Consequently discuss potential of LL as a pedagogical medium.

Primary schools: The use of LL allows pupils to reflect languages used in the society (use and function of these languages and their value in public places).

The beginners can be sensibilised to LL and to multilingualism by searching for different forms of linguistic signs. They can write them down and try to guess the meaning of LL in their town, street or restaurant (Fig. 6, 7). Using the *sensibilisation* we achieve positive motivation and more sensitive perception of linguistic diversity, as well as of charm of individual languages. The analysis of signs helps learners to perceive linguistic diversity of their surroundings. Thus, spontaneous connection to lifelong openness to multilingualism is created.



Fig. 6



Fig. 7

3.2.1 Projects

In the following lines, we propose an example of the project work.

Project Tea

Several subjects can be implemented into the project: foreign languages, history, biology, civics. The project is carried out in the following steps:

1. Short theoretical input – definition of LL, discussion (How many languages are used on a tea box? What is their order? Which kind of typeface is used? Where is a product from?)
2. Division of tasks before data collection (visit of individual shops, cafés and tea rooms in a town, taking photographs etc.)
3. Data collection in a town: Learners decide about the places to search for information related to LL, e.g. in a tea room (how a tea room is labelled next to the entrance door, drink list, other notices/labels inside. In a shop: How many kinds of tea are there? From which countries? What does the packaging look like? How do they differ? At home: Which kinds of tea do they have at home? Who is their producer? What does the packaging look like?)
4. Data interpretation: Analysis and classification of tea according to the given criteria. Assessment of products.
5. In parallel with step 4: Selection of suitable photographic material. While taking photographs accept anonymity, voluntariness, necessity to inform about the activity in a given area (e.g. ask for a permission to take pictures in a shop etc.).
6. Presentation (class, school, town) and collective preparation of tea.

It is important to explain and discuss the chosen topic and to show photographic material of the environs to learners. Thus, the connection among linguistic signs and learners (recipients) is created. Photographical material is analysed and assessed. Teacher pays attention to linguistic and contextual knowledge of the learners. They observe the country of origin of tea and discuss the role of colours, symbols and pictograms. Based on the given categories, learners try to describe data and rank them into groups. The presentation can consist of posters, exhibition, video, photographs presentation, short lecture for a school or town, etc.

Project *Tea* can be carried out at primary schools in simpler version. At secondary schools, it can be conducted as interdisciplinary project and obtained data (from tea rooms,

⁵ <https://www.goethe.de/ins/pl/de/spr/eng/1gl.html> [cited on 2020.30.05]

shops etc.) can be completed synchronously and diachronically with the information about tea origin.

During the project, learners train individual styles of reading, as well as other language skills. They also connect experiential learning to innovative learning. Their individual linguistic awareness is supported.

Another project, *Linguistic identity*, is focused on the deepening of reflection and discussion about multilingualism in a specific town or country or own learner's linguistic identity. The implementation contains the following steps:

1. Theoretical input – characteristics of LL, me and LL (personally important areas)
2. Data collection:
 - a) What signs and symbols of LL (which reflect our linguistic and cultural identity) are there in our country?
 - b) Taking photographs of signs of LL (15 – 20 totally).
 To increase learners' sensibility to visual data it is necessary to discuss also research and ethical aspects, e.g. voluntariness or anonymity.
3. Interpretation of obtained data. In this step, a learner individually classifies and assesses obtained LL.
4. Group work: Interaction and sign are in a centre – learners discuss their photographs and other gained material – at first in small groups and together they choose 3 – 5 of them. They interpret them orally and later in writing.
5. Presentation: Learner prepares a presentation in form of PowerPoint, short film, essay, photographs exhibition etc. The presentation is done at first orally, later in writing.

4 Conclusion

The public space is continuously changing and it requires permanent adaptation from the pedagogical viewpoint. Study of LL is relatively new. It is typical for searching and constant changes in methodological approaches, widening the research area and what is important for us, turning attention to the sphere of school. Inherent interdisciplinarity, multimodality and multidimensionality of LL contribute notably to it.

LL works as a research area, as well as a method (linguistic landscaping). Although connection of LL with language teaching is logical and obvious, potential of this sphere was discovered only few years ago, when first studies dealing with the use of LL as a medium in school context. Methodological use of LL in foreign languages teaching is in its beginnings and is not verified enough. One of the reasons is a fact that the use of LL in teaching is a relatively new phenomenon (vgl. dazu Baur, 2015; Sayer, 2010). Another reason is that it has explorative character. Two aspects related to the methodological process of LL are discussed in this paper: linguistic and contextual knowledge and interaction between a recipient and a sign. In connection with the first aspect, learners are explorers who study stories behind the signs. The second important aspect is a communication between a recipient and a sign. It is well conducted through innovative learning, searching for and guessing the meaning of LL out of school, as well as project work (topics like gastronomy, housing, holidays etc.). Common discussions, creation of criteria for the signs classification and assessment of individual categories are crucial during the work with LL. Of course, teacher's personality plays an important role, mainly their involvement and ability to connect theory with practice, their ardour, and creation of positive ambience. Teacher must acquire necessary knowledge about LL, be creative and apply their theoretical knowledge in practice in order to make LL an efficient medium in foreign languages teaching. Cooperation of teachers of various subjects plays an important role in the use of LL potential.

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THE CURRENT SITUATION IN 'SECOND CHANCE' EDUCATION IN SLOVAKIA

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Abstract: The paper offers an analysis of the current situation in so-called 'second chance education' in Slovakia. It is characterised by problematic accessibility, especially for people with little or no education, while the rate of early school leaving in Slovakia has been steadily increasing in recent years. According to Švec (2008, p. 225), second chance education is understood as "an opportunity for adults to obtain, in a continuous education cycle, the kind and level of education usually acquired in childhood or youth during the initial education cycle". Education of this kind is framed by several legal norms in Slovakia, particularly focusing on the legal framework of education aimed at lower secondary education (ISCED 2) and secondary vocational education (ISCED 2C, 3A, 3C). At the same time, forms of second chance education and problems with their application in practice are dealt with. The paper also includes available statistical data on the number of people who have completed this type of education.

Keywords: increasing level of education, legal framework of second chance education, low level of education, second chance education, secondary education

1 Introduction

Education is part of human potential enabling one to navigate the progressively more complex social environment. Although, on the one hand, a positive development in the educational level of the population can be observed; on the other hand, there are still individuals and social groups whose level of education significantly falls behind and is a major hindrance in their personal development as well as work and social opportunities. Among the causes of this are (among other things) continued processes of polarisation in social stratification (where education appears to be a key stratification factor), selective mechanisms in schooling, as well as differences in individual predispositions. At the same time, the education system in Slovakia is linear in nature. Here, linear nature means a solid and tested system supported by legislation, chronologically divided into internally interconnected stages, in the process of which one gains education determined by the framework of the mainstream culture. The process is based on mutual compatibility of successful training for a profession in the education system (from preschool to university), which is key to a person entering the labour market and finding a job, which, in turn, is a key attribute in the assessment of quality of life. Schooling is followed by the system of adult education, which, however, offers *adjustment* rather than *compensation*. It seems to be better suited to those who were successful in the previous stages of education and, from this viewpoint, just like other social systems, also bears features of governmentality and contributes to strengthening positions of those successful in initial education. Clear evidence for the above statement can be found in the attendance rates of adults with little or no education in adult education. According to the Labour Force Survey (Eurostat 2017) methodology, only 1% of the adult population take part in formal adult education. In contrast, among the registered unemployed, there are 5.89% of job-seekers with unfinished lower secondary education and 25.12% with completed lower secondary education. That means that 1% of adults further their education, while, in the group of the registered unemployed, 31% only obtained a low degree of education or failed to complete education altogether (*Unemployment – monthly figures; Nezamestnanosť – mesačné štatistiky*, September 2019).

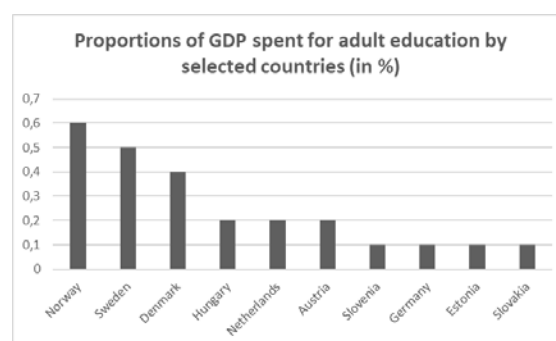
Table 1: Registered unemployment figures in Slovakia

month	total number	people with unfinished lower secondary education		people with completed lower secondary education	
		Number	share	number	share
October 2019	166,302	9,824	5.9%	42,136	25.3%
December 2018	169,802	10,687	6.3%	45,286	26.7%
December 2017	195,583	11,955	6.1%	52,428	26.8%
December 2016	276,131	14,597	5.3%	69,014	25.0%
December 2015	334,379	17,138	5.1%	80,997	24.2%
December 2014	373,754	18,209	4.9%	88,880	23.8%
December 2013	398,876	18,530	4.6%	93,766	23.5%

source: Nezamestnanosť – mesačné štatistiky. Úrad práce, sociálnych vecí a rodiny.

As can be seen, by 2019, the total number of registered unemployed decreased by more than half; however, the number of people with completed lower secondary education is slightly higher. This, on the one hand, means that Slovakia seems to be unable to provide appropriate job opportunities for people with a low level of education and, on the other hand, that it is more and more difficult for people who lack education to find a job. Active labour market policies are primarily directed at further education (acquiring a professional qualification by means of courses) as part of adult education. This form of education is, however, generally attended by those who already have an education, i.e. those who completed higher levels of schooling and now deepen, extend, or acquire further qualifications, which increases social disparity (Cameron 1987). Williams (2013) describes lifelong learning in the United Kingdom as a practice of separation which produces socially excluded people, disadvantaged due to their psychological characteristics. For the successful ones, education is an enriching experience, which enhances further development of their skills and control over their own lives, even though this scheme is harshly criticised in the postmodern period (e.g. Liessmann 2008; Keller, Trvdý 2008). Nevertheless, for those who, for various reasons, were excluded from this process or decided not take part in it, broadening the offer of lifelong learning can contribute to an increase in the gap between them and those that are well educated (*What works in innovation in education: combating exclusion through adult learning*, 1997). For illustration, Figure 1 provides a comparison of the proportions of GDP selected countries spend on adult education.

Figure 1: Proportions of GDP spent for adult education by selected countries (in %)



source: ANDRIESCU, M. et al. 2019. *Adult learning policy and provision in the Member States of the EU. A synthesis of reports by country experts*. Luxembourg: Publications Office of the European Union, p. 86. ISBN 978-92-79-98393-1

2 What is second chance education

Successful schooling completed with a certificate showing the level of education is still considered key for full-value social functioning, fulfilling social roles that are culturally attributed (from the gender as well as historical viewpoint) to adult age, regardless one's ethnicity or social stratification status. This is especially true for adults with little or no education and a low

level of basic skills. The above premise also defines the responsibility of society (state) to create conditions for all its members to succeed and acquire education in order to enhance their potential and take part in the development of society. In spite of the constitutional right to education and the legal obligation of schooling, a larger group of people still fail to meet the requirements of the education system and they leave school early.

The philosophical basis supporting second chance education states that the mistakes caused by selective mechanisms of the school system or by individuals leading to the early school leaving can be rectified later on (Yogev 1997, in: Ross, Grey 2005). Second chance education provides an alternative space in the system of education in order to complete a level of education. It is an inevitable and fundamental part of the concept of lifelong learning, as it, in its very essence, meets its main idea – open and accessible education at any age. While trying to define the term ‘second chance education’, one finds out that, within the Slovak environment, it is defined by Švec (2008, p. 225) as “an opportunity for adults to obtain, in a continuous education cycle, the kind and level of education usually acquired in childhood or youth during the initial education cycle”. According to Vellos and Vadeboncoeur (2013), typical participants in second chance education are young people who had been forced out of initial education or did not finish it for various reasons. The author defines second chance education as a way to achieve higher education that is, in the present-day neoliberal atmosphere, primarily associated with individual responsibility. He also labels second chance education as ‘second chance schools’, or ‘second way education’. The term ‘second chance education’ is missing from *Act No. 245/2008 Coll. on Education* (The Education act) within which this type of education falls legislatively. It uses, as an alternative, the term ‘increasing the level of education’. Kešelová, Grandtnerová and Urdziková (2016, p. 10) state that “in legislative and transnational documents, one can come across the term ‘education aimed at achieving lower secondary education’, ‘courses aimed at achieving lower secondary education’, ‘courses aimed at completion of lower secondary education’, or ‘second chance school’”.

In Slovakia, it is school laws that provide the legislative framework for an increase in the level of education, which makes it impossible to achieve education outside the school system. That, at the same time, means that the process and organisation of second chance education fully follows the conditions defined by *Act No. 245/2008 Coll. on Education*, even though the target group of such education has different social and psychological characteristics than children and youths.

Including second chance education in the system of educational sciences follows Švec’s classification (1995, p. 38). At the micro level of the institutional system, the author proposes the following classification:

- school pedagogy and andragogy,
- edifying pedagogy and andragogy,
- employment pedagogy and andragogy,
- pedagogy and andragogy of extra-curricular groups.

Second chance education is classified within the subsystem ‘school pedagogy and andragogy’, which deals with education in the school system (Švec 1995). It is part of formal education, which takes places in the network of educational institutions (primary and secondary schools and universities). It is to be available for people who, for various reasons, left initial schooling before they achieved a certain level of education and it is to open a so-called ‘second way’ in which an individual may acquire a specific level of education. In the process, identical sources are used to those applied in the education of children and youths within formal schooling. Průcha et al. (1995) define formal schooling as “education carried out in educational institutions (schools) whose functions, aims, content, means and ways of assessment are defined and legally determined”. Formal

education is generally perceived as education carried out in schooling institutions, a school subsystem whose aim is, according to Lukáč (2013), to provide compact education of a certain level, or extend education in specific fields or academic disciplines. In accordance with the definitions of the school subsystem and formal education, the author defines the main attributes of the school subsystem as follows:

- it is carried out at primary and secondary schools and universities,
- education is systematic,
- it is carried out within a relatively closed system,
- it is provided by permanent pedagogical staff,
- the content of education is defined by key pedagogical documents,
- it primarily uses the material basis of the educational institution where it takes place.

Therefore, second chance education is considered part of the school subsystem by pedagogy as well as andragogy, as Švec (2008, p. 17) also includes second chance education within adult education. Analogically, Lukáč (2013) defines substitution as one of the functions of the adult education school subsystem, which means that the school subsystem of adult education provides an opportunity to achieve education to those who, for various reasons, could not acquire it in the past (in initial education). In an effort to legitimise andragogy, one comes across definitions pointing out differences between andragogy and pedagogy (such as Beneš 2008; Palán 2002). In the process of second chance education, however, pedagogy and andragogy overlap, as:

- it is formal education (in a school institution) for the purposes of acquiring a level of education (which is, according to effective legislation, only possible in school institutions),
- it follows pedagogical norms and documents defining the education of children and youths,
- the target group are adults rather than children and youths, which, according to Beneš (2008), means they cannot merely be defined as students (since adults are not isolated from their social roles in the work, family and private sectors of life),
- whoever teaches the course cannot be a lecturer, or an educator of adults (as in the field of andragogy), but rather a teacher, or a pedagogue (at primary or secondary school).

3 Target group of second chance education

From the viewpoint of succeeding in the labour market, people lacking in or with a low level of education are in a difficult situation on a long-term basis. Such people usually have a negative experience with schooling, in which they failed, and most of them also decided voluntarily and consciously to abandon their studies. The reasons for early school leaving are usually multidimensional and vary between individual and structural motives (based on the family and school environment). Kelly (1995, in: Blaug 2001) defines two main models of reasons and factors causing early school leaving. The ‘drop out’ model emphasises individual factors and situational reasons as the main factors causing early school leaving (personal failure, social and economic factors within the family, pregnancy, starting a family, etc.). The ‘push out’ model points to the characteristics of education or other processes of supra-individual nature which lead to early school leaving. According to Raymond (2008), participating in second chance education provides a better prospect for those who have dropped out – left initial education for individual reasons.

A lower level of education is, traditionally, associated with a higher risk of poverty due to unemployment, a higher rate of criminality, violence and addiction (as well as other pathological phenomena), higher vulnerability and a higher risk of social exclusion in general. Neither prior to nor during the process, the target group of second chance education is homogenous and nor is the group of people who lack vocational, or have only

completed lower secondary, education. Should people who only completed primary education are placed in the same class as people who only dropped out in the final year of lower secondary education, it might be difficult to achieve educational standards (Kešelová, Grandnerová and Urdziková 2016).

The publication *Strategy of lifelong learning (Stratégia celoživotného vzdelávania, 2011)* claims that barely 0.5% of the adult population try to complete their education at the level of the school-leaving (Maturita) exam within school education and less than half out of these actually manage to do so. According to available statistical data, only 1.5% of the population aged 25 to 64 (regardless their education level on entering) took part in formal education in Slovakia in 2016. Statistics for Slovakia that would provide information regarding the participation of adults with no, or a basic level of, education in formal education are unavailable, or, school statistics only observe this group according to gender, level of studies and the study programme, not age. On top of that, adults are, according to effective legislation, also allowed to study in the full-time form, even though it is generally presumed they study part-time. More is known regarding the proportion of young adults who left school early – the Slovak Republic is, on a long-term basis, below the EU average and the figure of 10%. However, after a decrease between 2004 and 2010, the number is slowly growing. In 2018, the Slovak Republic even reported a higher proportion of young women who left school early in comparison to 2008 (*Early leavers from education and training, 2019*). The percentage grew from 4.7% in 2010 to 9.3% in 2017. The government document *National programme for the development of education in the Slovak Republic for the period 2018 – 2027 (Národný program rozvoja výchovy a vzdelávania v SR 2018 – 2027, 2018)* points to the fact that those who have achieved the lowest level of education are least likely to re-enter education and the level of early school leaving in Slovakia has a rising tendency, which is associated with an insufficiently inclusive educational system in the Slovak Republic. Should this trend continue, it will be difficult to meet the EU target of 10% or less early school leavers. Moreover, in a country where the number of such young people is growing, also due to an already existing lack of qualified work force, the risk of high levels of unemployment and disruption to social cohesion is also increasing (cf. Nevala et al. 2011).

The Central Bureau of Labour, Social Affairs and Family provide statistics showing a high proportion of people with no, or lower secondary education within the total number of the unemployed. In September 2018, the proportion of registered job seekers with unfinished lower secondary education within the total number of job seekers was 6.04% and the proportion of job seekers who had completed lower secondary education was 25.67% (*Unemployment – monthly statistics; Nezamestnanosť – mesačné štatistiky, September 2018*). By September 2019, the proportion of job seekers with incomplete lower secondary education had dropped to 5.89 % and the proportion of job seekers who had completed lower secondary education within the total of job seekers remained approximately the same – 25.12% (*Unemployment – monthly statistics; Nezamestnanosť – mesačné štatistiky, September 2019*). Considering the present-day economic situation, which is characterised by a high market demand for work force, the problem of the ‘unemployability’ of people with the lowest level of education is more and more obvious, especially due to an increase in those who leave school early. Regional differences are also highly prominent, which can be seen in Table 2 below, providing data for the Prešov self-governing region.

Table 2: Job-seekers recorded by the Prešov self-governing region and their proportion (%) within Slovakia

month	unfinished lower secondary education	%	completed lower secondary education	%	lower secondary vocational education	%
09/ 2019	4,461	45.0%	12,957	30.7%	567	43.0%
12/ 2018	4,709	44.1%	13,605	30.0%	487	41.0%
12/ 2017	5,161	43.2%	15,022	28.7%	481	40.0%
12/ 2016	6,369	43.6%	18,772	27.2%	562	37.2%
12/ 2015	7,416	43.3%	19,894	24.6%	2,311	32.3%
12/ 2014	7,981	43.5%	21,056	23.7%	3,049	33.0%
12/ 2013	8,247	44.5%	22,134	23.6%	2,092	23.7%

source: Statistic data of Central Bureau of Labour, Social Affairs and Family in Bratislava

4 The legal framework for acquiring lower secondary education and lower secondary vocational education

The present study focuses on the possibilities and the current state of increasing the level of education in people with no education and those who have completed lower secondary or lower secondary vocational education. For this reason, there is no analysis of possibilities to complete a level higher than secondary vocational education, which is formally finished by obtaining a vocational certificate.

At present, second chance education at primary school is legally defined by *Act No. 245/2008 Coll. on Education, Edict No. 320/2008 Coll. on Primary School, Framework Curricula and Educational Standards for Achieving Lower Secondary Education* (part of Education Law § 30 Art. 5 and § 42 Art. 4 of Education Law), *Act No. 5/2004 Coll. on Employment Services, Act No. 417/2013 Coll. on Assistance in Material Need* (§ 12 – motivational contribution). According to *Act No. 245/2008 Coll. on Education*, education aimed at achieving lower secondary education can be provided by both primary and secondary schools. The target group are physical persons who have not completed lower secondary education according to § 16 Art. 3 Let. b), for whom a primary school can, in accordance with § 30 Art. 5 of the law, run courses aimed at achieving that level of education. A significant number of adults who have not completed primary school are registered unemployed. In spite of that fact that unemployment offices ‘have available’ the greatest target group of people with no, or a low level of, education, according to *Act No. 5/2004 Coll. on Employment Services*, achieving a level of education, with the exception of completing the final year of primary or secondary school by a job seeker for the purposes of acquiring a certificate (§ 44 Art. 3) is not considered part of the preparation for the labour market. Only the part-time form of studies is possible, in the full-time form, a person becomes a student (defined as a 100% student) and stops being a job seeker.

The Central Bureau of Labour, Social Affairs and Family can offer courses aimed at completing primary or secondary education, but only in the last year of one’s studies, by means of national or pilot studies in education and preparation for the labour market (§ 54, *Act No. 5/2004 Coll. on Employment Services*) in cooperation with a specific school. In this case, long-term job seekers (registered for a minimum of 12 months) are the only target group.

Considering the target group of educated adults who are studying and, at the same time, fulfilling other social roles, the part-time form of studies seems to be, at first sight, most convenient. This might, however, be difficult for the participants when taking their level of academic competence into consideration. The part-time study form is also more demanding in the area of self-education, time management (when studying at home), and the ability to find necessary resources and information for one’s studies. Farrington et al. (2012) point out that successful education requires academic competence in the form of academic behaviour and approach of non-cognitive character (such as perseverance, resilience, time management, ability to search for study materials, etc.).

The fact that curricula and education standards for second chance education have not been developed appears rather

problematic. They are only available for the full-time form of study (*Curriculum framework and education standards for achieving lower secondary education*, 2015). The absence of curriculum framework for the part-time study form means it is not clear what the learners are to study, to what extent and with what time allocation, nor is it clear what key competences and at what level they are supposed to achieve when completing individual courses.

The completion of primary school and acquiring secondary vocational education is, at secondary schools, run as:

1. courses aimed at the acquisition of lower secondary education (under the same conditions as primary schools) according to § 42 Art. 4 of *Education Law*, "a secondary school can run courses aimed at completing lower secondary education for physical persons who have not acquired that level of education according to § 16 Art. 3 Let. b). The participant is to be examined in front of a commission in all subjects, apart from subjects with educational focus¹. On successful completion of the final exam, the secondary school will issue the physical person a report with an insertion, stating the acquired level of education."
2. courses aimed at achieving lower secondary vocational education. This concerns completing a minimum of 2-year and a maximum of a 3-year educational programmes, labelled as F-type (formerly lower trade schools). This concerns such programmes as the production of food and textiles, clothes making, machine operating, wood work, etc. The first year of such programmes can also be enrolled in by such adults who have not yet completed the final year of lower secondary education, or their results were assessed as inadequate on its completion, or, there is no proof of completion available.
3. courses aimed at achieving secondary vocational or upper secondary education. These programmes are completed with the issuing of a vocational certificate, or a school-leaving report (Maturita), which is, naturally, the most desired by both learners as well as employers.

Alongside 2-year secondary-level educational programmes, secondary schools can also offer courses aimed at completing lower secondary education. In this way, the so-called linearity of education (when individual levels follow and function as a precondition of each other) is broken up. Certainly, this is a positive element, which increases the availability of higher education for people with a low level of completed education.

The insufficient flexibility of the school system might be one of the reasons why there is such low demand for completion of lower secondary education among people who lack it. Acquiring a vocational certificate is conditioned by completing lower secondary education. Such programmes are, however, rarely offered by primary schools, as they are financially unattractive. For this reason, a proposal by the Ministry of Education, Science, Research and Sports of the Slovak Republic (*A proposal for conceptual solutions supporting the system of enhancing lower secondary education; Návrh krokov na koncepčné riešenie podpory mechanizmu doplnenia základného vzdelania*, 2017) seems prospective; it suggests as a precondition for completing secondary education by completing the first year of lower secondary vocational education (the first year of secondary vocational school in a 2-year F-type study programme). In practice, learners who have not yet completed lower secondary education would not have to do so while studying at secondary school; instead, on the successful completion of the first year of upper secondary education, they could take an exam in front of a commission in all general-education subjects (part of the curriculum for completing lower secondary education) and, in this way, also complete their lower secondary education. In essence, this combines the framework curriculum for lower secondary education with that of lower secondary vocational education in a modified way (an increased number of lessons in general-education subjects in the

framework curriculum of lower secondary vocational education). This proposal has, however, not yet been put to practice.

It is worth mentioning how the completion of lower secondary and secondary vocational education in adults is financed. Should an adult complete their lower secondary education at a secondary school, such a school then gains 10% of the average normative amount per one such student, compared to a primary school student (§ 4 Art. 13 *Regulations of Government of the Slovak Republic No. 630/2008 Coll.*). Should a learner take classes in a part-time form, the funding of such a student is 40% of the normative amount in comparison to a full-time student. The same principle applies if an adult is in the process of completing their lower secondary education. It is interesting that the normative amount for convicted prisoners who take part in full-time second chance education is 300% of the normative amount per student in the same full-time study programme (§ 4 Art. 4 *Regulations of Government of the Slovak Republic No. 630/2008 Coll.*).

5 On possibilities of acquiring lower secondary education

For those who, for various reasons, were not able to succeed in the early phases of training for their vocation, the present-day education system in Slovakia provides the following systemic opportunities to acquire the level of education/qualification:

- a) Advancing one's level of education in the school system – second chance education, in which adults study with the aim of increasing their level of education (from completing lower secondary education to acquiring a university degree);
- b) Taking and completing educational activities (accredited education) in the system of further education with the aim of acquiring a certificate of complete or partial qualification (*Act No. 568/2009 Coll. on Lifelong Learning, Zákon č. 568/2009 Z.z. o celoživotnom vzdelávaní*).
- c) Acquiring a certificate of qualification (partial or complete) on completing the process of testing specialised skills by the institution that was authorised to carry out exams testing said skills (according to § 15 *Act No. 568/2009 Coll. on Lifelong Learning, Zákon č. 568/2009 Z.z. o celoživotnom vzdelávaní*). The certificate of full qualification does not increase the level of education.

The above types of education enable one to achieve a level of education or professional qualification and, at the same time, an increased chance to succeed in the labour market. Kešelová, Grandtnerová and Urdziková (2016, p. 37) state the following three levels of second chance education in Slovakia:

- a) preparation to start education;
- b) achieving, or completing, lower secondary education (ISCED 2),
- c) achieving upper secondary vocational/full secondary (vocational or general) education (ISCED 3).

Nevertheless, Slovak education legislation does not include preparation to start education; this is carried out as preparatory education aimed at managing the basic literacy necessary to complete lower secondary education according to *Act No. 5/2004 Coll. on Employment Services* within education and preparation for the labour market. Thus, this is not a true systemic element of schooling but, rather, *ad hoc* education according to the present needs and possibilities following the ongoing project activities of employment offices.

The education system and the system of further education that follows it are always of normative character, as education is a paradigm of personal development and social advancement. In modern societies, education focused on competences, the risks of which are pointed out by Liesmann (2018), prevails. At present, education and its outcomes are strictly subjected to the requirements of the market, utilisation of the competences and anything that is not immediately applicable in the labour market is considered pointless. Even second chance education in the syllabus of which technical subjects dominate over those

¹ Subjects such as Music, Art and Physical Education.

subjects with educational focus directly proves the above claim. Supporting technical subjects at the expense of education-focused and general-education ones is a manifestation of strengthening focus on competence-oriented education for the needs of the labour market. The risks of such an approach can be seen in suppressing the general personal development of adults who should not be mere sums of competences and possibilities for their utilisation in the labour market. Education should be a way to develop one's personality as a whole towards a higher level of independence, capability of autonomous decision-making, i.e. general empowerment, as this is the only way for educated (rather than skilled) people to take their fate into their own hands. Without a more substantial philosophy of education (taking not only the economic motives of the learners but also their intellectual, social, civic, moral and aesthetic motives into consideration), those looking for a second chance will only get bare bones; merely a strictly functional education with no respect for the many other reasons why they came back to school. That is why such education is inappropriate for the development of democratic society (Rose 2012, pp. 185-186).

As was mentioned above, it is only possible to complete lower secondary education at those primary schools which offer such a course and, since 2012, this has also been possible at secondary vocational schools. Most people who attended second chance education in order to complete their lower secondary education took such courses at secondary vocational school. This is also stated by the *State school inspectorate (Štátna školská inšpekcia)* in its *Report on the state and level of the process and conditions of organising education to achieve lower secondary education (Správa o stave a úrovni procesu a podmienok organizovania vzdelávania na získanie nižšieho stredného vzdelania, 2018/2019)*, which claims that lower secondary education is predominantly completed at secondary vocational schools, even though, in comparison to primary schools, they are disadvantaged in the areas of personnel and, mainly, accessibility. In 2018, 870 people were in the process of completing their lower secondary education. Out of these, only 55 people completed a course in lower secondary education at primary schools, while 815 completed the course at secondary vocational schools. Most people completed their lower secondary education in the Košice and Prešov regions, which coincides with the highest concentration of people with unfinished lower secondary education.

Table 3: Numbers of schools and students involved in second chance education at primary and secondary schools in 2018/2019

district	primary schools		secondary schools	
	number of schools	number of students taking the course	number of schools	number of students taking the course
Bratislava	3	24	2	6
Trnava	-	-	6	115
Trenčín	2	4	2	10
Nitra	-	-	4	37
Zilina	1	7	4	40
Banská Bystrica	3	12	9	107
Prešov	1	2	10	212
Košice	2	3	9	288
Total - Slovak Republic	12	55	46	815

source: Vančíková, K., 2019. Otvorenosť a flexibilita druhošancového vzdelávania. In: Hall, R. et al., 2019. *Analýza zistení o stave školstva na Slovensku: To dá rozum*. Bratislava: MESA 10, p. 4. Available at: <https://analyza.todarozum.sk>

The authors, in the introduction of their publication *An analysis of findings regarding the state of the education system in Slovakia: Your brain should tell you (Analýza zistení o stave školstva na Slovensku: To dá rozum, 2019)*, which provides valuable findings regarding the state of second chance education in Slovakia, incorrectly, most likely for simplification reasons, labelled the course aimed at achieving lower secondary education as a 'second chance education' course. Although it is not a major issue, Slovak education legislation does not recognise such type of education and, for those well-informed,

the use of such a term causes confusion in the publication ('second chance education' is any education aimed at acquiring any level of education in adult age, not only completing lower secondary education).

According to the above quoted *Report on the state and level... (Správa o stave a úrovni..., 2018/2019)*, an interesting phenomenon occurred between 2012 and 2018. In the observed period, the Košice region (followed by the regions of Prešov and Banská Bystrica) saw the highest number of early school leavers completing their lower secondary education within second chance education. These were unsuccessful students who, after the compulsory number of years at school, had to leave before their completed lower secondary education; however, they were offered a second chance to acquire this level of education. That is why the inspection stated something that had been known for a very long time – that the education system is primarily oriented at compensating for unsuccessful education rather than prevention that would positively influence the success rate, especially, of those students coming from a socially disadvantaged environment. Courses aimed at completing lower secondary education also take place at allocated workplaces at secondary schools, which are founded in areas with the highest concentration of socially excluded communities. Hall et al. (2019) claim that the accessibility of courses aimed at lower secondary education is especially problematic in those areas where no allocated workplaces are founded at secondary schools. One can agree with the above statement based on the fact that primary schools try to avoid this agenda, mainly for financial reasons. On the other hand, it is necessary to point out that the allocated workplaces at secondary schools provide education that is closest to the excluded, however, at the same time, with a risk of even greater social exclusion, as Balážová (2015) points out. Those who completed such courses often find it hard to navigate through a greater environment, compared to their own. The authors of the present paper have encountered a young woman, a member of the marginalised Roma community, who, having completed such a course at an allocated workplace within secondary school, visited the district capital for the very first time at the age of 24. Her encounter of experiences from the 'big city' made her great fear obvious, she was worried she would get lost and never come back home.

6 On providing second chance in acquiring secondary vocational education

There were some drawbacks found in the process of education aimed at acquiring lower secondary education at secondary vocational schools. These raise doubts regarding the level achieved by those who completed it, since the same classes were provided to all the learners with varied levels. Apart from this, it became clear that secondary schools do not have sufficient personnel to provide qualified tuition across all subjects. The state school inspectorate expressed doubts regarding the quality of this type of education at secondary schools. That is why it is questionable how the proposal to offer a chance to complete lower secondary education in parallel with the first year of higher secondary education would work in practice (*A proposal for conceptual solutions.../Návrh krokov na koncepčné riešenie podpory..., 2017*). It is, therefore, necessary to add that secondary schools are also inclined to offer courses aimed at completing lower secondary education due to a chance of holding on to the learners for the courses aimed at the higher level of education. This is, undoubtedly, strong enough motivation in the competitive market, as a great number of secondary schools have to 'fight' for every single student and function in an environment defined by a strict normative framework of financing.

Currently, there is no concise information on second chance education at secondary schools aimed at acquiring vocational education (the present paper does not follow possible activities of secondary comprehensive schools). Although it is true that Hall et al. (2019) approached secondary schools by means of questionnaires, they were only interested in whether the addressed schools offer courses aimed at completing lower

secondary education. Kešelová, Grandtnerová and Urdziková (2016) only provide two examples from programmes aimed at acquiring vocational education at a secondary school. Such courses are often offered by those schools that provide full-time courses of the F-type, i.e. those that are completed in two years with a report of the final exam. These are schools and programmes that are often attended by students from a socially disadvantaged environment, especially those who left school earlier than the 9th year of study.

Table 4: Examples of secondary schools offering lower secondary vocational education (F-type study programmes)

school	study programmes
SVS* for the hearing impaired, Bratislava	machine operating, agriculture
SV Polytechnic, Dolný Kubín – Kňažica	machine operating, clothes making
Private SVS, Dolný Kubín	building trades
Secondary Technical School of Agriculture and Food Industry, Kežmarok	home economics, food industry
Ján Bocatio SVS, Košice	home economics
SVS of Agriculture and Rural Services, Košice	home economics, food industry, agriculture
SVS, Kráľovský Chlmec	building trades, clothes making
SVS of Engineering, Kysucké N. Mesto	agriculture
Majster Pavol SVS, Levoča	agriculture, car mechanics, building trades
SV Polytechnic, Liptovský Mikuláš	agriculture, food industry
Combined School, Martin	wood work, machine operating, car mechanics
SVS, Moidava n. Bodvou	building trades, home economics, clothes making
SVS, Nitra	building trades
SVS of Commerce, Nová Baňa	building trades, agriculture, clothes making
SVS, Nové Mesto n. Váhom	machine operating, agriculture, metal work
SVS Jána Antonína Baťu, Partizánske	shoe making, leather work
Secondary Technical Vocational School, Piešťany	machine operating, building trades
Combined School, Poltár	agriculture, forestry, food industry, glass production
SVS, Prakovce	home economics, forestry
SVS technická, Prešov	building trades
SVS, Pribenik	food industry, agriculture
SVS, Príevdza	building trades
SVS of Agriculture, Food Industry and Technology, Rimavská Sobota	agriculture, home economics, car mechanics
Combined school, Sečovce	machine operating, clothes making, home economics
SVS, Senica	home economics, building trades
SVS, Stará Ľubovňa	forestry, building trades, home economics
SVS, Strážske	home economics, building trades

source: own findings; *SVS – Secondary Vocational School

Self-governing regions, as founders of secondary schools, do not keep data on schools providing courses aimed at adults lacking vocational education. Such an agenda is, for instance, according to the head of the Department of School Education of a self-governing region, completely in the hands of school headmasters. Secondary vocational schools definitely have potential (technical, personnel, and material) to provide education to those adults who did not succeed in the past or never started vocational training. Some schools identified such a possibility, mainly in those regions with a high concentration of people lacking vocational education (several districts in the regions of Prešov, Košice and Banská Bystrica). In general, secondary schools are not active enough in seeking and recruiting adult students. It could be assumed that, due to demographic changes (aging population) and a negative trend in the increase of early school leavers, secondary schools will also focus on the target group of adults lacking vocational education. For the time being, this area has not been sufficiently elaborated by secondary school founders, neither is second chance education enforced as an independent agenda in the regional strategic documents on the development of education.

To find out the number of secondary school offering second chance education (ISCED 2C, 3A, 3C) and the study programmes on offer, one could follow the statistics provided by the Slovak Centre of Scientific and Technical Information. In their statistics, the part-time form of education at secondary schools is recorded independently from other forms. The authors of the present paper were primarily interested in the data regarding people who had completed upper secondary education, secondary education, and F-type programmes with specially adjusted curricula (regardless their founder). In the academic year 2018/2019, 1,376 students completed secondary education in the part-time form, i.e. achieved upper secondary vocational, or secondary vocational, or lower secondary vocational education. Most of them completed upper secondary education (962), while the fewest completed education with adjusted curricula (60). It is interesting that the highest proportion of

women could be found in the group of those who completed an F-type programme where women made up 83.3%. Such type of education is only offered by state schools. At present (data from September 15th, 2019), the above types of education in the part-time form is attended by 3,652 students (*Statistical almanac – secondary vocational schools; Štatistická ročenka – stredné odborné školy*, 2019). It must, however, be noted that there is no way of finding out from the statistics whether the adult participants also study full-time and, also, what time elapsed since the students who enter second chance education last attended continuous education (i.e. these might, for example, be students who started attending secondary school a year after they completed lower secondary education).

7 Conclusion

In Slovakia, courses aimed at acquiring upper secondary vocational education, secondary vocational education, or lower secondary vocational education are offered in the network of secondary vocational schools which can, at the same time, offer those interested a chance to complete their lower secondary education. The process of education is fully subjected to education legislation; however, in the case of adults who aspire to a higher level of education, key roles are also played by other factors exceeding school practice (unemployment, family factors, coordinating work and study duties, individual study competences, etc.). The study strived to provide an overview of legislative and institutional background of second chance education. Based on desk research into available documents, it could be stated that the current state is not satisfactory with regard to accessibility and achievement of education standards. The authors of the paper feel it is necessary to change the approach of secondary and primary school founders towards the adult population lacking education and a low level of skills who are still the most problematic and numerous clientele of employment agencies. At the same time, they are, in the current setting of acquiring skills, primarily reliant on the offer of courses provided by private educational institutions in the system of further adult education. It is true this set-up enables one to acquire a vocational qualification (for the unemployed also provided free of charge by means of the Repas programme) but it is unable to equip socially excluded people with no, or low level of, education with such personal characteristics that would not only be connected to succeeding in the labour market, but would also allow for general personality development, also in the moral, civic, aesthetic, and social dimension. Short-term retraining, motivational courses and training are a necessary supplement to education; they, however, do not solve the existential problems of socially excluded groups in an effective way not only with regard to their succeeding in the labour market but also in their empowerment for a better future social life.

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Primary Paper Section: A

Secondary Paper Section: AM

POLITICAL INFLUENCE OF NON-GOVERNMENTAL ORGANIZATIONS AND CIVIL SOCIETY

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Abstract: This paper discusses the political influence of NGOs and civil society on political development. Non-governmental organizations have no direct impact on government actions, but they have an opinion-forming function, by which they can influence citizens and voters. In this respect, it is important that NGOs act in the interest of citizens, which is a sensitive and difficult to prove topic in the case of foreign funding. Just as civil society needs to organize itself in NGOs for its development, these organizations need funding for their activities. The interest of government should be to ensure sufficient funding for this area, which will to some extent prevent the influence of foreign donors on the political situation in the given country. The article is addressing a current issue, as NGOs are an integral part of any democratic society. Their influence on the political situation was noticeable in Slovakia before the 1998 parliamentary elections, when they influenced the electoral behavior of citizens, thus influencing the overall result of the elections. Contemporary literary sources, opinions of Slovak experts, but also the theoretical definitions of NGOs and civil society were used to better understand the position of NGOs in the society.

Keywords: civil society, non-governmental organizations (NGOs), 1998 parliamentary elections, Slovak Republic, political change

1 Introduction to concept of civil society

In order to examine non-governmental organizations (NGOs), their activities or members, we must first define the very environment in which they are created. The non-governmental sector is supposed to have its role in every democratic country, as civil society is one of the manifestations of a healthy democracy. The definition of civil society is not uniform; every social scientist and author interested in the issue emphasizes different attributes, which is also a sign of dynamism in this area - in terms of main social themes of a particular period. In terms of political science, civil society is essentially the possibility for citizens to influence the execution of government power, thus improving their living conditions, which is most often achieved through membership in certain organizations. (Barrett, Zani, 2014) We can understand civic associations, non-profit organizations or political parties as an expression of civil society, but also social values, public opinion or democracy itself. In Central Europe we tend to define and divide civil society in a way corresponding to Karel Müller's concept for example, who applied a structural normative view in his book "Češi a občanská společnost" and recognizes two main theoretical approaches; economic and socio-cultural (Müller, 2002).

Müller does not analyze the economic approach in depth, referring to it as reductionism, which has significant limitations and handicaps. As part of this economic approach to civil society research, there are two contradictory currents - leftist and capitalist. The leftists refer to the Marxist-Hegelian ideas and define civil society as a necessary product of an imperfect system that later merges with the government, after the victory of proletariat (working class). Reductionism in this approach is a simplification of social conflicts to economic conflicts. The capitalist interpretation describes the libertarian model, a market operating with minimal government interference, in which the market and the state should not restrict each other. Civic organizations entering into this relationship are, according to this interpretation, an unnecessary element. In this case, civil society is reduced to a part of the state apparatus which it is to be integrated to make the functioning of the market more efficient.

According to Karel Müller, the socio-cultural approach is much more important for social sciences, as it does not focus on

society only in the sense of an economic entity. In this approach we recognize three ways of interpretation - generalists, maximalists and minimalists. Generalists define civil society broadly, on the level of a political system exhibiting certain characteristics. They emphasize legal political power, pluralism of opinions, public debate or free market (Jašková, 2019). Müller compares them to the group of Scottish moralists. Thus, from this point of view, civil society is a precondition for a functioning democracy.

The maximalistic interpretation of civil society describes it as a whole area outside the government, as all institutions that are not involved in execution of power. They include for example, the market economy, political parties, public opinion or various forms of social cooperation. According to maximalists, civil society is everything but the executive, the legislature, and the judiciary. Müller compares their interpretation to the concept of Jeffrey Alexander called „umbrella like concept“ (Müller, 2002).

Minimalists go even further and their interpretation removes both the market economy and other institutions that do not provide scope for mutual solidarity. Civil society is an expression of the universal values of the society and strengthens the emergence of unified identity. Thus, in a minimalist interpretation, civil society is the sum of values, traditions and norms, culture and morals which are universal for a particular society. Citizens are bound by a tight network of interpersonal relationships, solidarity and loyalty. It implies a developed and mature community, a rich civic life and an interest in the common good. (Amirkhanyan, Lambright, 2019; Okanazu, Madu, Igboke, 2019) This approach is based on the functioning of the non-governmental sphere in established and developed democracies, but is very difficult to achieve in practice.

2 Materials and methods

The main goal of our paper is to illustrate the power of NGOs to influence the governmental sphere, despite their position based in their name - non-governmental organizations. Partial goals of our paper are to analyze the situation before the 1998 Slovak parliamentary elections, as well as the foreign financial support of NGOs in this period. We used a combination of scientific methods to achieve our goals. During the processing of theoretical knowledge we used the method of scientific abstraction, by which we determined the basic context of the examined issue. The method of analysis has helped us to define the extent of elaboration of this topic in scientific literature. The acquired knowledge was then processed by the use of scientific synthesis, which led to our conclusive findings.

3 Non-government non-profit organizations

Thus, NGOs could not function without civil society and democracy, and organizing into NGOs is an expression of active citizenship. (Bee, Guerrina, 2017) These organizations are referred to as the „third sector“, they do not participate in the governing and have no political ambitions, they are founded by physical or legal persons and their field of activity is very broad. In the case of a sufficiently developed civil society, we will find non-governmental organizations covering all civic interests and needs. (Kidd, 2016; Cseh Papp, 2018) However, our article focuses on non-profit organizations dealing with the quality of democracy and human rights, so called „think-tanks“ of critical thinking or „watchdogs“ of democracy. These NGOs differ from other citizens' associations in some attributes: their activities are beneficial to the public, they have a formal structure, voluntary membership, they are self-governing, profit-making is not their goal and are, of course, independent of the government and political leaders (Pirošik, 2004). Of course, these organizations need funding to spread their message, and they can get necessary finances in several ways. For example, one way in these particular organizations is to offer analytical services, where NGO experts conduct analyzes, political, economic or

sociological surveys, consultancy services for media or political entities or publish professional publications.

The main sources of funding currently include:

- Tax assignments - a mechanism for transferring a certain percentage of personal and corporate income tax
- Voluntary donations and gifts, philanthropy, public collections
- Membership fees from registered NGO members, income from their own activities
- Finances from government or local government
- Funding from European Union grants
- Finances from foreign donors

(Ekonomika MNO, 2019)

NGOs have ten main functions, according to Martin Bútorá in the publication „Čítanka pre neziskové organizácie“ (Bednárik, et. al., 1998):

1. Formulating and interpreting the ideas and demands of citizens - which takes place during their active participation. The non-governmental platform provides space for citizens and can further professionalize their opinions or complaints, for example in the form of lobbying.
2. Preservation and development of diversity, plurality. NGOs associating minorities or maintaining the folklore and cultural heritage have an irreplaceable role in the society.
3. Opinion-forming function. NGOs can support government policy, interpret it and explain it to the public, but also opponents creating a certain opposition platform. This function also played a role in Slovak politics and elections in 1998, which we will mention in the next chapter.
4. Acting in favor of social integration. Inclusive function, in terms of providing space for all groups and classes of citizens, minorities and marginalized groups.
5. NGO as an agent of political socialization. Through membership and participation, but also from a position of reader and listener to NGO's activities, citizens acquire political and democratic principles.
6. Control functions. NGOs may be in the aforementioned "watchdog" position of democracy, criticizing any undemocratic actions of the government. Along with the free media and opposition political parties, they act as warning mechanisms, or as so-called "whistleblowers".
7. Provision of services and public goods - especially those which are not covered by the State. These can be, for example, humanitarian and social services, education and awareness raising, but also legal counseling or environmental protection.
8. It is a terrain for social innovation and experimentation. As stated in forementioned publication, D.H. Smith is the author of the idea, that new schemes of social interaction and assistance can run within the non-governmental sphere, because it is risky to integrate them nationwide without trying. In the case of good results, they can then be offered to the government and implemented more widely.
9. Conflict prevention and resolution - this area mainly concerns racial and ethnic conflicts, which are better received by the community in form of community activists than by government workers.
10. Reproduction of social wealth. Social wealth does not mean material goods, but theoretical concepts and strategies responding to current problems, practical experience and encouraging solidarity as well as the feeling of belonging.

4 The history of Slovak NGOs

Before the year 1989, civic activities criticizing the government were illegal and persecuted in the political system of former Czecho-Slovakia Federation, but civil society in the form of opposition think-tanks functioned secretly, at the level of so-called dissent. These individuals and groups expressed their opinions and criticism through prohibited prints called samizdat,

maintained contact with Western countries, and spread news from the "outside" - democratic countries from around the world. (Občianske hnutie Verejnosť proti násiliu (VPN) vzniklo pred 25 rokmi., 2014) After the democratic transition and later independence of the Slovak Republic, conditions for civil society were much more favorable and NGOs as well as opposition think-tanks were able to operate freely. Their function, however, was limited by the lack of funding and attacks of former government, which distorted democracy in several ways.

The former government was criticized both by foreign and domestic experts, it was described as authoritarian, and in the second half of the 1990s the situation began to escalate. Government criticism has been a frequent reason to be pushed out of government and public service platforms, mostly into NGO structures. Criticism was directed at the privatization of strategic enterprises into unprofessional hands - presented as the creation of a domestic capital-forming class, minimum foreign investments, unemployment at the level of 14% as well as isolation from the European Union and its structures. Other countries also responded to our situation e.g. démarches from the European Union and the moniker "Black Hole of Europe" by US Secretary of State, Madelaine Albright. Thus, during the Vladimír Mečiar's government, opposition, liberal politicians and experts gathered in the non-governmental sector, supporting their cooperation and the emergence of new society and democracy oriented think-tanks. Their creation was also supported and financed by foreign donors. The goal of these think-tanks was to return the Slovak Republic to the path of reforms and modernization, which was far from done only by transformation from the totalitarian regime. This agenda was also present in the programs of the opposition parties, and the subsequent government of Mikuláš Dzurinda put it into practice (Schneider, 2003). NGOs created between 1993 and 1998 which were focused on commenting and analyzing politics have mostly dealt with the same subject - criticizing Mečiarism, and warning about its consequences.

Their position in this period was complicated not only in terms of accusations and attacks by the government and political leaders, but also in terms of financing. At that time, the Slovak Republic was not a member state of the European Union - which was undesirable in Mečiar's regime, so NGOs could not ask for financial support from EU sources. Government grants for opposition think-tanks were also sporadic. The mechanism of tax assignments, by which citizens give part of the paid tax to selected NGOs, did not exist at the time, it was introduced by the subsequent government. At that time, philanthropy and financial donations from individuals and businesses were minimal, both as a result of the 14% unemployment rate and the resulting economic situation, as well as a result of the „novelty“ of democratic regime and its elements in our conditions (Fíla, Schwarczová, Mura, 2015). The NGOs had to turn to foreign donors sharing the same political opinions at the time. The largest donors were foreign foundations, such as the Ford Foundation, the German Marshall Fund of the US, the Charles Stewart Mott Foundation, the Open Society Institute and the Sasakawa Peace Foundation (Marček, 2004). On the other hand, this gave the government another reason to accusations and conducting an anti-campaign against these think-tanks and their representatives.

5 The 1998 parliamentary elections in Slovakia

The period between 1994 and 1998 can be characterized as a period of unconsolidated democracy. The regime that emerged in Slovakia after the early parliamentary elections in 1994, was atypical for the development of democracy in Central European countries. We can find the equivalent in the form of the rule of the Croatian President, Fraňo Tuđman, which can be characterized similarly authoritarian. For both types of governance, the term „hybrid regimes“ is used in the literature (Hloušek, Kopeček, 2003). In this context, S. Szomolányi (1999, p. 59) states that Slovakia was characterized by a high fragmentation degree of political entities with signs of polarization at the time, which resulted in a bipolar configuration

in the form of two antagonistic groups of political parties - which can not be defined as one-dimensional on the left-right scale of the political spectrum. (Horváth, 2017) They can be defined schematically, as an authoritarian versus liberal-democratic profiled groups, both in terms of understanding leadership policy and in the value orientations of their supporters.

As a result of the political struggle and the lack of a clear vision of the future of the country, self-governing principles in the area of political and social system were suppressed in favor of strong government administration (Horváth, Cívik, Švikruha, 2018; Cívik, Meluš, 2019). During this period, political leaders took only those measures that could be used to promote their own political interests in some way - those which were expected to assist them in the process of gaining or maintaining power.

In terms of the functioning of the political system in this period, it can be stated that not all the conditions required by the democratic process have been met (Horváth, Hrušovský, 2009). Although free and competitive elections were held, what happened after cannot be associated with a true nature of democratic and legal state. Deficiencies in the governance and institutional organization of the country also affected those areas that fell within the relatively accessible civic participation. (Buleca, Mura, 2014) This situation was expected to be changed by the 1998 parliamentary elections.

Thus, the situation just before these elections was tense. Former coalition led a confrontational and discriminatory campaign, public media were abused, criminalizing of political opponents was present, as well as exceeding the legal limit of funds to run the campaign. (Surmánek, 1998). Shortly before the elections, a new electoral law was passed, which was not only unfair to political opponents, as it was clear tactical change of rules during the game, but moreover, the law carried some undemocratic and unconstitutional elements. MPs demanded to declare these parts as unconstitutional:

- 1) restrictions for the electoral campaign on public media, Slovak Television and Slovak Radio (§23 par. 1)
- 2) §17 par. 2, whose discriminatory character prevented political party candidates from standing on lists of other political parties or coalitions;
- 3) §16 par. 2, which transferred the obligation to create the electoral district commission from the mayor to the head of the district office. (Krištofik, 2001)

The new law introduced single electoral district, which by the way persisted until now, and it apparently helped Vladimír Mečiar and HZDS to win at that time. Nevertheless, the HZDS failed to form a government coalition, which was then created by different parties from opposition: the Slovak Democratic Coalition (SDK), the Democratic Left Party (SDL), the Hungarian Coalition Party (SMK) and the Civic Understanding Party (SOP). This new government was led by Mikuláš Dzurinda, and it was pro-democratic and pro-western.

The 1998 elections had a remarkable voter turnout - 84.2% of voters had participated. For illustration – the first, founding elections of 1990 had a turnout of 95.4% of voters, 84.20% of voters attended the 1992 elections and turnout further dropped to 75.7% in 1994. After the 1998 elections, turnout dropped again and literally fell in the upcoming years. Since 2006, the parliamentary elections in Slovakia have not exceeded 60% level of voter turnout. This disparity in electoral turnout therefore raises the question: what led to such massive mobilization of voters in 1998? It was largely the activity of NGOs.

Table 1 – Voter turnout in Slovak parliamentary elections

Parliamentary elections (year)	Voter turnout in %
1990	95,4
1992	84,2

1994	75,7
1998	84,2
2002	70,1
2006	54,7
2010	58,8
2012	59,1
2016	59,8

Source: Voľby do Národnej rady Slovenskej republiky, 2020

The most important pre-election projects were the Civic Campaign 98 (OK98) and the Rock of the Elections 98 (Rock Volieb 98). OK98 was created as a platform associating NGOs with the aim of contributing to active involvement of citizens in the electoral process. The campaign aimed to mobilize and educate voters, as well as to monitor the electoral process. (Bútorá, 2010) The OK98 was declared by 35 founding NGOs, which showed their distrust to the government at that time, and the number of member organizations almost tripled in a few months. Rock Volieb 98 had a similar goal - ensuring maximum participation of young people aged 18-25 in the upcoming parliamentary elections. Educating youth on how to be capable citizens is also important in current and modern democracies, as the 2016 presidential elections in the U.S.A. have shown that productive citizenship is not always a matter of course. (Rebell, 2018) In 1998 Slovakia, this was done through rock concerts, which included discussions about society, elections and their importance for the future of the country, and the life of every citizen (Kampaň Rock volieb má presvedčiť najmä prvovoličov, aby išli voliť., 1998). In addition to the media campaign and organizing concerts, discussions and spreading of educational materials were also done by the “traveling bus”, which travelled through 22 cities across Slovakia with many stops in nearby towns and villages.

Confirmation of foreign funding of the anti-government campaign is also found in the statement of journalist Martin Šimečka, who confirmed the engagement of NGOs in the 1998 elections at the public event “Otvorene o extrémizme” in 2017 in town of Čadca, during the discussion: „Probably the financial support provided by Soros to NGOs campaigning against Mečiar... without foreign funding we might not have been able to do it. (Soros pomohol poraziť Mečiara - Šimečka, Smatana, Mečiar., 2018)

The power of NGOs to influence policy was shown in the 1998 elections. Organizations directly not involved in politics expressed their ability to change it through influencing the citizens. However, the legitimacy of such campaigns may raise questions and doubts, especially when funding comes from foreign sources. The 1998 political change is broadly perceived positively - former government was openly crossing the borders of democracy, but the situation may be different. Non-governmental organizations can hypothetically act with the support of foreign entities in order to destabilize the country, and transform the government for their own benefits.

6 Financing of NGOs after the 1998 elections

Thus, an important question awaiting the new government was to find a way of funding NGOs that would involve citizens in a way other than direct donation. After decades in totalitarian regime, donation and philanthropy was not widespread among Slovak citizens. Therefore, the mechanism of tax assignments has been introduced into the Slovak legislation, which provided citizens with the possibility to give part of their income tax to a selected NGO or other approved entity. The taxpayer assigns a part of the tax which he must pay - if he does not state any recipient, the full amount is paid to the government. This mechanism was launched in 2002 and has gained large popularity among citizens and NGOs since then. It has also

undergone many changes, and at the present time, assignments are also possible for legal entities (companies).

Under current legislation, a physical person may assign a 2% share of the paid tax. If he / she submits a confirmation of volunteering for at least 40 hours, he / she may assign up to 3%. This part of tax is transferable to one beneficiary, if the amount is at least 3 €. For legal entities the conditions are slightly different, they can assign 2% of their paid tax only if they have donated at least 0.5% of this paid tax to other entities during the current taxation period. In case they have not donated the corresponding amount, they can only assign 1% of the paid tax. However, they may distribute the amount among several beneficiaries, but only if the amount for each beneficiary is at least €8 (Act No. 595/2003 Coll.) Currently, there are 14 915 NGOs on the list of beneficiaries, which is approximately 12 times more than in 2002, when there were 1 250 beneficiaries listed. During the 2017 taxation period, 63.27 million € was transferred through this mechanism. (Asignácia dane., 2019). As we can see in the table below, the income of NGOs has an increasing nature and hence independence from foreign funding was secured also by this mechanism, to some extent.

Table 2 - Summary income of Slovak NGOs from tax assignment

Taxation period	Amount of assigned finances
2002	1.16 mil. €
2003	1.37 mil. €
2004	19.18 mil. €
2005	22.72 mil. €
2006	29.12 mil. €
2007	31.92 mil. €
2008	35.70 mil. €
2009	54.39 mil. €
2010	43.91 mil. €
2011	40.39 mil. €
2012	42.14 mil. €
2013	48.81 mil. €
2014	52.12 mil. €
2015	48.43 mil. €
2016	60.93 mil. €
2017	63.27 mil. €

Source: Asignácia dane, 2020.

7 Conclusion

While NGOs have no direct impact on political decision-making and the government, they have an impact on citizens as they are opinion-forming, integrating and socializing. The citizens, in a role of voters, have this influence through the election of their political representatives. The 1998 elections demonstrate the non-negligible impact of NGOs on citizens. In addition to high voter turnout, the change of political leaders and the switch of government policy from isolated to pro-European were also ensured. However, NGOs would not be able to finance such extensive pre-election activity without foreign help - financial donations from foundations and funds mostly from the US. The question of legitimacy is appropriate in such case, since it was, a foreign activity to bring significant political change in the country. In this respect, domestic NGO funding is more acceptable and should be a matter of course in every healthy democracy. However, donation and philanthropy were still under-used in Slovak society at the end of the 1990s, which was compensated by the introduction of tax assignment mechanism. Thanks to this mechanism as well as financial support from the European Union, financing of NGOs is much smaller problem than in the past.

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Primary Paper Section: A

Secondary Paper Section: AD

CONCENTRATION OF REGION INTELLECTUAL CAPITAL WITHIN THE BOUNDARIES OF A LEADING UNIVERSITY: JUSTIFICATION OF EXPEDIENCY

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Abstract: The aim of the work is based on objective evaluations show the role and importance of the intellectual capital of the territory, as well as its concentration within the structure, is the owner of its maximum volume and is able to its permanent generation - leading University. As a key result, the article presents the theoretical justification of a complex structure that provides integration and concentration of intellectual capital of individual regional structures. The scientific novelty of the publication is the very important research task associated with the justification of the expediency of the concentration of intangible capital, as well as the justification of the proposed format of the organization of intellectual capital management in the region within the structure of the leading University.

Keywords: intellectual capital, region, development, competitiveness, knowledge, innovative economy

1 Introduction

The issues of relevance of the development of intellectual capital issues at micro - and meso-level are considered in the author's works over the past seven years (Maltseva, Monakhov, Klyushnikova, 2015; Maltseva, 2018). Despite the fact that the topic is not completely new, it has not lost its relevance and is finding more and more practical applications related to the practical application of intellectual resources, which requires their identification and concentration.

The direct relationship between individual elements of the intellectual capital of universities and regions has been demonstrated in a number of studies, including an analysis based on the processing of data arrays on the formalized values of integrated indicators of the intellectual capital of domestic universities and Russian regions (Maltseva and Veselov, 2018).

The results of the analysis showed the presence of statistically significant relationships primarily between the human capital of universities and the region, while in some cases, the assessment of other types of intellectual capital is also a sufficient correlation.

Thus, taking into account the results obtained in the research, a hypothesis was put forward about the feasibility of concentrating the region's intellectual capital within a specific structure that has its maximum volume and is able to "pull" the intellectual capital of other enterprises and organizations both physically (for example, attracting specialists) and virtually (for example, forming an information resource with systematized information about intellectual property objects).

The theoretical justifications of this hypothesis are given below, based on the systematization of the opinions of scientists and specialists on this issue.

2 Background and Methodology

In the theory of material production, the concentration and centralization of capital is recognized as the basis for the formation of large business units that can provide solutions to a wide range of tasks and maintain stability in the market. In the theory of intellectual capital, this trend also occurs, which is especially significant given the synergy effect that is created in the process of interaction of various elements of intellectual capital with each other.

In the work of Gordeeva (2012), it was noted that for the Russian Federation, the highest concentration of capital is characteristic of industries that are of strategic importance to the state. Taking into account the increasing role of knowledge, science and technology in the socio-economic development of the country, which is enshrined in the strategy of innovative development of the Russian Federation. The strategy of scientific and technological development of the Russian Federation and other regulatory and policy documents, the concentration of intellectual capital can create the effect of growth points for high-tech products and intellectual services.

Additional advantages of capital concentration, which can also be translated to the specifics of intellectual capital, are the possibility of identifying and rational use of excess resources, reducing the risks of functioning of socio-economic systems, which is noted in the work of Vavilova (2008).

These theses are theoretical prerequisites for the feasibility of concentrating intellectual capital within specific structures, including within the borders of the region. All this makes it possible to ensure more effective management of intellectual capital at the meso-level and get the greatest effect that can have a significant impact on regional development.

In the work of Chub and Makarov (2015), the role of intellectual capital and the degree of its concentration in the processes of increasing the stability of the development of spatial formations is clearly indicated, which requires the assessment and optimization of the processes of distribution and redistribution of intellectual capital of territories, i.e., its management.

Intellectual capital management at the micro level is the placement and use of intellectual capital resources, as well as the management of them and their transformation (into other intellectual capital resources or into traditional economic resources) in order to maximize the current value of the organization in the eyes of stakeholders (Ruus, et al., 2008).

At the meso-level, the process of managing intellectual capital is a set of actions and measures aimed at ensuring effective planning, organization and control of the processes of formation, development and use of intellectual capital in the region, as well as motivation of its accumulation and multiplication (Lukicheva, 2009).

The goal of intellectual capital management is to accumulate intellectual capital, identify and disseminate information and experience, and create conditions for the dissemination and transfer of knowledge (Krakovskaya, 2009).

Within the framework of intellectual capital management, tasks are solved to ensure its growth, expand opportunities for its use, and increase returns.

Prikhach et al. (2014) point to the need to take into account the state aspect in the process of managing intellectual capital in

combination with territorial, i.e. actions in line with national efforts, but in combination with territorial specifics and features.

Makarov (2012) identifies the following areas of development of the region's intellectual capital:

- 1) concentration of efforts-creating a competitive advantage through the formation of regional specialization;
- 2) uniform development of the region's intellectual capital structure and creation of a competitive advantage on this basis;
- 3) moving towards balance-eliminating imbalances in the structure of intellectual capital.

Thus, the concentration of intellectual capital in specific areas and areas is one of the promising regional strategies.

In accordance with the Strategy of spatial development of the Russian Federation for the period until 2025 (2019) stands out clearly a list of promising economic specialization of the Russian regions, which further emphasizes the strategy of intellectual capital.

The document also states that the promotion of the development of promising economic specializations of the Russian Federation subjects will be carried out through the introduction of the concept of "smart specialization" into management practice.

The concept was formulated by the expert group of the European Commission "Knowledge for growth" as a strategy for innovative development of regions, which assumes the most effective use of their features and development of competitive advantages. Smart specialization combines industrial, innovative, and educational policies aimed at selecting a limited number of priority areas for investment within a region, focusing on its strengths and comparative advantages (Egorova, 2017).

This approach is largely related to the development of the intellectual capital of the regions, since it is the intangible components that can provide their own unique special development strategies for the subjects of the Federation.

In Alashev et al. work (2016) highlighted the increased importance of higher education for the development of regions and industrial growth, including through resource provision and competitiveness performance.

The spatial development Strategy of the Russian Federation for the period up to 2025 (2019) also pays special attention to the development of universities in the regions.

Thus, the document points to the need to ensure the acceleration of economic, scientific, technological and innovative development of territories by promoting cooperation between scientific institutions and higher education institutions with business, including the formation of at least 15 world-class scientific and educational centers that unite the leading Russian Federation educational organizations of higher education and science institutions, research centers, centers of competence of the National technological initiative, as well as creating interregional competence centers on the basis of leading professional educational organizations; creating large interregional centers for identifying, supporting and developing abilities and talents in children and young people, etc.

In addition, the issues of development of social sphere sectors through the creation and development of interregional centers for rendering services in large urban agglomerations of Federal significance through the development of leading educational institutions of higher education and the use of their potential in providing services in the field of innovative development of agglomerations are highlighted.

The role of universities in the development of regional intellectual capital is indicated in the works of Golubkin and Svetlov (2011). Based on the analysis of world practice, the

author argues that intellectual capital becomes the basis on which long-term strategies of all subjects of innovative development are based, since the strategic goals of the organization of educational institutions are correlated with the strategic needs of enterprises in personnel and innovative developments.

Justifying the need to concentrate intellectual capital on the platform of a leading University, we can refer to the theses given in the works of Makarov (2015) that at the regional level, the significance of the total intellectual capital of organizations is not too significant and is largely derived from the total human capital. The exception will be regions where the role of a particular organization or organizational cluster is too high. For the rest, consideration of the intellectual capital of organizations in the region can be attributed more to the study of economic growth factors than to the management of the region's intellectual capital. This seems to be true even if the scale of the system is further increased, although it certainly requires further verification.

3 Discussion and Results

The concentration of intellectual capital in the region within the boundaries of the host university may actually represent the presence of systematic information about the existing intellectual capital, as well as an efficient system of reproduction, expansion and improvement of qualitative characteristics of intellectual capital in the region that is created as part of an organized system of training, retraining, advanced training, and perform applied research and providing expert analytical services, it allows you to find tools and methods for the growth of intellectual capital and improving the efficiency of its operation.

Important attention is paid to the environmental paradigm, which defines the conditions under which the region's intellectual capital functions. As an additional component of intellectual capital, the author identifies a new dimension – issues of spatial distribution and concentration. The presence of a regional environment that promotes the development of intellectual capital of economic entities within the territory is a significant factor in its advanced development.

The subjects of intellectual capital management in a region are a set of legal entities and individuals that own it. A comprehensive effect of intellectual capital management in the region is achieved only if the efforts of individual economic entities are coordinated, which can only be achieved if a single platform is formed that provides systematization of information about available intellectual capital and implements recommendations for its effective integrated use. Obviously, such a platform should have the most significant intellectual capital, which can distinguish it from other economic entities.

The design of the competence center should be based on the following basic principles: conceptuality; distributed leadership; management based on basic values; interaction and partnership with innovative business.

Based on the results of the analysis of theoretical, methodological and practical aspects, proposals were formed for the organizational and economic model of the competence center on the platform of the leading university.

For the purposes of the study, the following definition of the competence center is proposed: the regional competence center on the platform of a leading university is a specially designated structure, which main purpose is to coordinate the management of intellectual capital in the region and promote its formation, multiplication and effective use.

The model of the regional competence center is given above, which can be implemented practically taking into account the specifics of specific regions and leading universities, their specialization, key types of practical activities, etc. (Fig. 1).

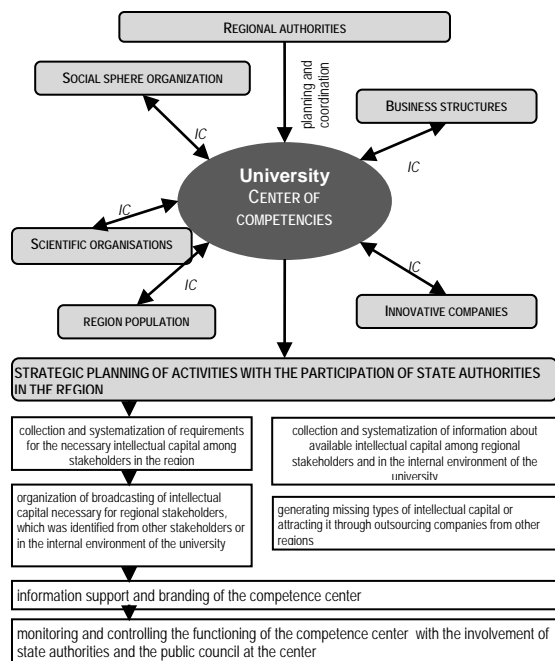


Figure 1. The model of regional centre of competence
Compiled by the authors

The literature describes other approaches to the formation of similar structures that have their own specifics and can be used as alternatives for this model.

The concept outlined in the work of Serdyukova (2013) can be used as a basis for the organizational and economic model of concentration and management of intellectual capital on the platform of a leading university. According to the author, the main driver of the development of innovative systems is an adequate understanding, coordination and stimulation of relationships between participants in the innovation process.

Thought factories, which are research organizations that carry out information– analytical, expert and indirect lobbying activities, correlate quite closely with the format of the organization of competence centers (Krakovskaya, 2009).

Depending on the goals of the factory, thoughts can have different formats of activity (Krakovskaya, 2009):

- analytical center;
- virtual team—a working group that includes participants from different cities and countries who interact exclusively via the Internet or special software. This format allows you to attract high-level specialists who are quite specific in their field of activity.

Structuring existing expert communities around the client allows you to implement your information policy with their help, as well as identify high-level narrow professionals for involvement in the client's strategic projects.

In the work of Gitelman and Kozhevnikov (2013), the definition of the competence center as a structure of the sector of highly professional services is given.

The competence center is a structure aimed at finding new knowledge, actively transferring it, and providing consulting, service, and highly professional services. The competitiveness of the competence center is determined by the first-class level and creativity of employees, their motivation to self-development and increase of intellectual capital.

The authors identify the mechanism for creating, updating, storing and distributing new knowledge as an essential

characteristic of competence centers, their identifier, and their difference from other structures. Additional characteristics of the competence centers are the interdisciplinarity of the tasks to be solved, the involvement of specialists from different fields of knowledge, continuous self-training of employees, the use of special methods: teamwork, organizational and activity games, foresights.

4 Conclusions

The concentration of intellectual capital in a leading University, which plays an important role in the regional socio-economic system, is the basis for the development of the total intellectual capital of the territory, which increases its importance and provides a much greater effect than its diversification in various organizations in the region.

The presented model can be implemented to ensure the goals of concentration, coordination, translation and generation of intellectual capital in the region and provide the necessary prerequisites for its effective use.

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Primary Paper Section: A

Secondary Paper Section: AH

RELATIONSHIP TO SPORTS AND ACTIVE MOVEMENT ACTIVITIES OF STUDENTS OF THE PEDAGOGICAL FACULTY OF COMENIUS UNIVERSITY IN BRATISLAVA

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Abstract: The authors in their contribution describe the issue of attitude and relation to sport and active physical activity of university students of the Pedagogical Faculty of Comenius University in Bratislava, who study in the study program - pre-school and elementary pedagogy. The aim of the contribution is to present and evaluate the answers of 101 students of bachelor and master study concerning their attitudes and relation to sport as a part of their student and private life based on a questionnaire consisting of 26 questions. In the quantitative research the results of the questionnaires of the studied students were analyzed by statistical methods of mathematical induction. Based on the evaluation of questionnaires by means of percent-frequency analysis and obtained results from testing of 10 hypotheses using the Chi-square test, we can conclude that the evaluated university students in their value perception are mostly positively related to active physical activity. Most of the students (61.9%) know the influence of physical exercise on their organism and therefore they do recreational sports. They learned most about the importance of movement for their health at school and from their parents. Most of the students have been engaged in sports or recreational physical activity since pre-school and school age because of the desire to move and to compensate stress. Most students evaluate their health status as good, but they would like to increase the weekly 2-hour physical education during the week to more hours. An interesting finding was that more than 46% of the surveyed students did not perform any physical activity outside physical education lessons realized during their studies at the Faculty of Education. However, most of the students do irregular skiing sports in winter. The negative finding was that in case of possibility to represent their faculty in some selected sports, most of the students were not interested in this representation because of the high workload during their studies and active participation in temporary work.

Keywords: Sport, active movements activities, university students, health condition, representation of the faculty, ski sports, swimming, hiking.

1 Introduction

Adequate physical activity is an important part of every individual's life, including the university population. Not every individual has the potential to become a top athlete. We believe that much more important than becoming a top athlete is to achieve a lasting lifelong relationship with sports and active recreational activities performed regularly during their studies, later during employment until older age. Physical activity is a basic biological need of most living organisms and it is as important to them as food and sleep. Exclusion or limitation of physical activity usually affects human activities negatively: physical fitness decreases, various diseases develop, and aging processes are accelerated. Active recreational physical activity helps by activating the cerebral cortex, creating improved conditions for the development of thinking, creating, interaction and feeling. This is also why it is very often recommended to use appropriate physical activity against the undesirable consequences of a tense mental activity such as: sports recreational activities, physical work, movement-related hobbies, and other activities. Several researches by physical education doctors and pedagogical experts confirm that employed people who are physically fit have more vitality and feel better than those whose condition is inadequate. Physically fit individuals are able to suppress the fatigue of the monotony of life, as good fitness allows them to retain much more energy and therefore interest in their work.

However, the beneficial effect of sports and recreational activities is not only to reduce fatigue or to improve the physical and mental fitness of the body. The secretion of hormones-endorphins, which have a positive effect on mood, well-being, pleasant feelings - these are the so-called "endorphins of happiness", is very important. By speeding up the blood circulation during exercise, brain tissue is better perfused what is important for everyone, but especially for students and mentally working individuals. Recommendations of physical activities as part of a healthy lifestyle are encountered in the work of several

authors, e.g. Bence (1999, 2008), Rybárik-Bence (2000), Kalečík (2000), Murgová (2001), Šimonek (2003), Novotná-Merica (2007), Gregor (2007, 2013), Dahlke (2008), Horáková (2009), Hřčka et al. (2011), Merica (2012), Antala et al. (2014), Argaj (2016) and others. These authors emphasize, in particular, the need for recreational but regular movement as an inevitable necessity for every individual.

It is important to emphasize that teachers have a significant influence on the development of education and training. The importance of the teaching profession extends to all areas of society. The teacher influences the nature and quality of the relationship with the pupils, determines the atmosphere in the classroom, stimulates the interest of the pupils - including their relation to sport and active physical activity, their life in school, development of their knowledge and their personality: Belešová (2018), Čavojský (2015), Nemcová (2016). This topic as it is elaborated opens possibilities further to qualitative research, e.g. Kostrub (2016), Severini-Kostrub (2018).

Adequate physical activity is also related to rational nutrition, drinking regime and sufficient sleep. More and more often, doctors recommend relaxation techniques, sports and recreational activities, changes in lifestyle, improvement of physical and mental fitness, meditation et cetera to release stress. Sports nutrition was mainly dealt by authors: Clarková (2000), Konopka (2004), Fořt (2005), Grotto (2009), Piřha-Poledne (2009) and others. According to some authors, up to 90% of all diseases are diet-related, disregarding infectious diseases and injuries. Clarková (2000) emphasizes on the importance of natural nutrition, where fruits and vegetables contain 70-85% water and should be the main, i.e. ideal food. At the same time, she attributes an important place to carbohydrates for faster recovery of recreational athlete after exercise. She emphasizes that muscles can refill glycogen stores at a rate of about 5% per hour. Therefore, it takes at least 20 hours to fully refilled stocks. Ideally, it is advisable to eat high carbohydrate foods within 15 minutes after exercise. More precisely, the total intake is 1 g per 1 kg of weight every 2 hours during six to eight hours. Konopka (2004) formulated 10 principles of healthy and full nutrition for recreational as well as top athletes. They are: varied diet but not eating much, less fat and fat products, spicy but not salted, less sweets, more whole grain products, enough vegetables, potatoes, and fruit, less animal and more vegetable protein, skip alcohol consumption, eat more often but less, prepare everything tasty and pretty for the eyes. Fořt (2005) emphasizes the link: nutrition - sport - health.

2 Methodology

The aim of the contribution is to find out attitudes and relationship to sport and active physical activity of 101 university students of bachelor and master studies at the Pedagogical Faculty of Comenius University in Bratislava, who study in the study program - pre-school and elementary education.

Tasks. Based on our goal, we set the following tasks: to choose a university in Bratislava to solve our issue, to compile a questionnaire from 26 questions and to gain knowledge of attitudes and relation to sport and active physical activity among university students. Achieved results statistically processed and evaluated based on percentage-frequency analysis and Chi-square test.

Hypotheses. Based on the goal and tasks of the contribution, we created 10 hypotheses, which we approach in the results of the work.

Methods. Our research was attended by 101 students from the Pedagogical Faculty of Comenius University in Bratislava, of which 44 were bachelor students and 55 were master students.

These students attend study program of pre-school and elementary education. In quantitative research, the results of the questionnaires of the studied students were analyzed by statistical methods of mathematical induction. The results are presented in graphs with an opinion about the individual 10 hypotheses. From the hypothesis testing using the Chi-square test we confirm or do not confirm the existence of statistically significant dependence on the significance level of 0.05.

Statistical Processing. In this quantitative research (Stockemer, 2019), testing hypotheses were performed by using non-parametrical test of Fisher. The Fisher test (Sprent, 2011) or its modifications (Barot and Krpec, 2019) is an option for data processing in contingency tables where multiple choices appear in the questionnaire and where two categorical variables are considered. The significant level was determined as value of 0.05 in this paper. Following data processing was provided using the software PAST Statistics version 2.17 proposed by (Hammer, et.al., 2001).

3 Results and discussion

Statistical method of the mathematical induction was realized for following determined hypotheses (zero and alternative hypotheses):

1H0: "There are not statistically significant dependences between an effect of a physical exercise in favor of a body and type of study of respondents (Bachelor/Magister)."

1H1: "There are statistically significant dependences between an effect of a physical exercise in favor of a body and type of study of respondents (Bachelor/Magister)."

2H0: "There are not statistically significant dependences between a season of realized sporting activity and type of study of respondents (Bachelor/Magister)."

2H1: "There are statistically significant dependences of a season between realized sporting activity and type of study of respondents (Bachelor/Magister)."

3H0: "There are not statistically significant dependences between a reason for the realization of sporting activities and type of study of respondents (Bachelor/Magister)."

3H1: "There are statistically significant dependences between a reason for the realization of sporting activities and type of study of respondents (Bachelor/Magister)."

4H0: "There are not statistically significant dependences between a number of hours devoted to physical activity and type of study of respondents (Bachelor/Magister)."

4H1: "There are statistically significant dependences between a number of hours devoted to physical activity and type of study of respondents (Bachelor/Magister)."

5H0: "There are not statistically significant dependences between an interest in Physical activities in physical education and type of study of respondents (Bachelor/Magister)."

5H1: "There are statistically significant dependences between an interest in Physical activities in physical education and type of study of respondents (Bachelor/Magister)."

6H0: "There are not statistically significant dependences between frequency of winter sports and type of study of respondents (Bachelor/Magister)."

6H1: "There are statistically significant dependences between frequency of winter sports and type of study of respondents (Bachelor/Magister)."

7H0: "There are not statistically significant dependences between interest in representing the faculty in sports and type of study of respondents (Bachelor/Magister)."

7H1: "There are not statistically significant dependences between interest in representing the faculty in sports and type of study of respondents (Bachelor/Magister)."

8H0: "There are not statistically significant dependences between in active sports in a club for a period of study and type of study of respondents (Bachelor/Magister)."

8H1: "There are statistically significant dependences between in active sports in a club for a period of study and type of study of respondents (Bachelor/Magister)."

9H0: "There are not statistically significant dependences between respondent's approach to active physical activity within a study and type of study of respondents (Bachelor/Magister)."

9H1: "There are statistically significant dependences between respondent's approach to active physical activity within a study and type of study of respondents (Bachelor/Magister)."

10H0: "There are not statistically significant dependences between assumption of realization of respondent's physical activity after graduation and type of study of respondents (Bachelor/Magister)."

10H1: "There are statistically significant dependences between assumption of realization of respondent's physical activity after graduation and type of study of respondents (Bachelor/Magister)."

Table 1 Assignment of Particular Items in Questionnaire and Considered Hypotheses

Hypothesis	Categorical Item	Categorical Item
1H	Item 3	Type of Study (Bachelor/Magister)
2H	Item 5	
3H	Item 7	
4H	Item 11	
5H	Item 12	
6H	Item 15	
7H	Item 19	
8H	Item 20	
9H	Item 23	
10H	Item 26	

For each hypothesis, a contingency table (Table 2-11) was constructed and then hypothesis testing was performed. These results are based on p-values (Table 12). If p-value is greater or equal as the significance level 0.05, than the zero hypothesis is filled to reject (dependences are not proved). In other case, the zero hypothesis would be rejected in favour of the alternative hypothesis (dependences are proved). Each testing hypothesis is complemented by descriptive plot of absolute frequencies (Fig. 1-10) achieved for corresponding categories of the type of study of respondents.

Table 2 Contingency Table for Data of Item 3 in Hypothesis 1H

Option:	Bachelor	Magister
a	9	6
b	14	17
c	3	8
d	9	5
e	0	1
f	1	0
ab	1	1
ac	0	1
af	2	1
bc	0	2
bd	1	2
bf	2	5
cd	2	4
cf	2	0
df	0	2
Sum	46	55
	101	

Table 3 Contingency Table for Data of Item 5 in Hypothesis 2H

Option:	Bachelor	Magister
a	16	22
b	3	2
c	19	22
d	2	4
ac	1	3
ad	0	1
bc	2	1
cd	3	0
Sum	46	55
	101	

Table 4 Contingency Table for Data of Item 7 in Hypothesis 3H

Option:	Bachelor	Magister
a	13	20
b	2	5
c	2	0
d	2	8
e	3	1
f	4	5
ab	6	5
ac	3	0
ad	5	5
ae	3	1
af	1	2
bd	1	3
cf	1	0
Sum	46	55
	101	

Table 5 Contingency Table for Data of Item 11 in Hypothesis 4H

Option:	Bachelor	Magister
a	22	25
b	5	14
c	10	9
d	9	7
Sum	46	55
	101	

Table 6 Contingency Table for Data of Item 12 in Hypothesis 5H

Option:	Bachelor	Magister
a	5	4
b	21	20
e	1	2
ab	17	25
bc	0	1
be	2	3
Sum	46	55
	101	

Table 7 Contingency Table for Data of Item 15 in Hypothesis 6H

Option:	Bachelor	Magister
a	8	12
b	20	24
c	10	13
d	1	1
ad	2	2
bd	5	3
Sum	46	55
	101	

Table 8 Contingency Table for Data of Item 19 in Hypothesis 7H

Option:	Bachelor	Magister
a	15	19
b	31	36
Sum	46	55
	101	

Table 9 Contingency Table for Data of Item 20 in Hypothesis 8H

Option:	Bachelor	Magister
a	5	3
b	32	40
c	7	11
ac	2	1
Sum	46	55
	101	

Table 10 Contingency Table for Data of Item 23 in Hypothesis 9H

Option:	Bachelor	Magister
a	29	35
b	14	15
c	3	4
Sum	46	55
	101	

Table 11 Contingency Table for Data of Item 26 in Hypothesis 10H

Option:	Bachelor	Magister
a	10	14
b	20	23
c	2	2
d	4	6
e	9	8
ad	0	2
bc	1	0
Sum	46	55
	101	

Table 12 Achieved Results of Testing Considered Hypotheses

Hypothesis	p-value	Conclusion
1H	0.36168 > 0.05	1H ₀ is failed to reject on the significance level.
2H	0.46977 > 0.05	2H ₀ is failed to reject on the significance level.
3H	0.22937 > 0.05	3H ₀ is failed to reject on the significance level.
4H	0.26288 > 0.05	4H ₀ is failed to reject on the significance level.
5H	0.79001 > 0.05	5H ₀ is failed to reject on the significance level.
6H	0.93861 > 0.05	6H ₀ is failed to reject on the significance level.
7H	0.83747 > 0.05	7H ₀ is failed to reject on the significance level.
8H	0.60981 > 0.05	8H ₀ is failed to reject on the significance level.
9H	0.95100 > 0.05	9H ₀ is failed to reject on the significance level.
10H	0.73583 > 0.05	10H ₀ is failed to reject on the significance level.

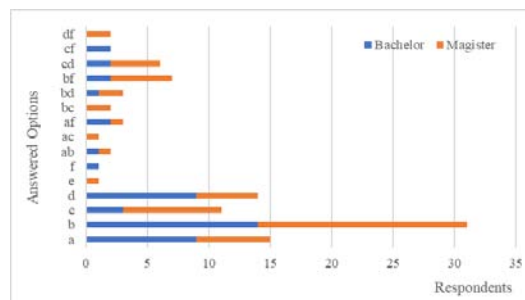


Figure 1 Distribution of Answered Options for Data of Item 3 in Hypothesis 1H

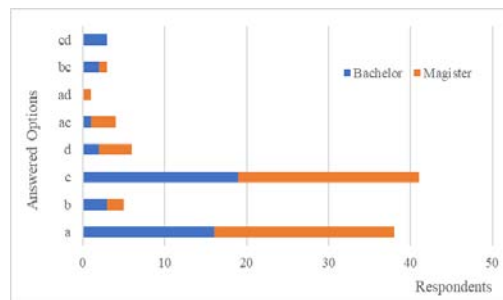


Figure 2 Distribution of Answered Options for Data of Item 5 in Hypothesis 2H

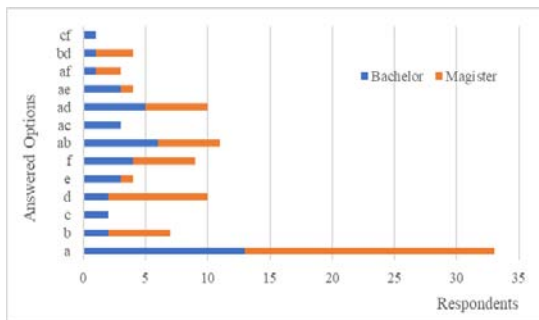


Figure 3 Distribution of Answered Options for Data of Item 7 in Hypothesis 3H

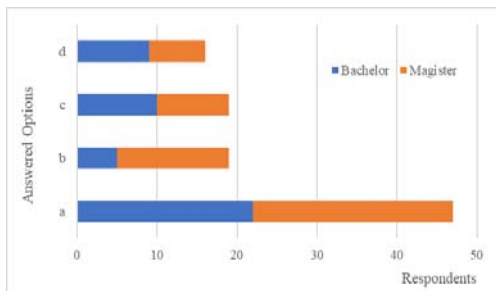


Figure 4 Distribution of Answered Options for Data of Item 11 in Hypothesis 4H

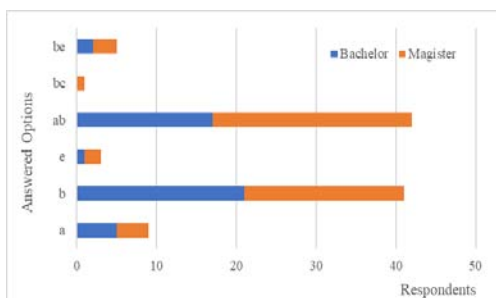


Figure 5 Distribution of Answered Options for Data of Item 12 in Hypothesis 5H

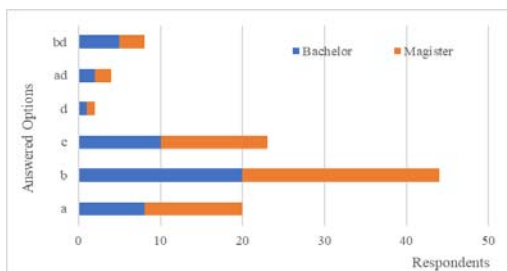


Figure 6 Distribution of Answered Options for Data of Item 15 in Hypothesis 6H

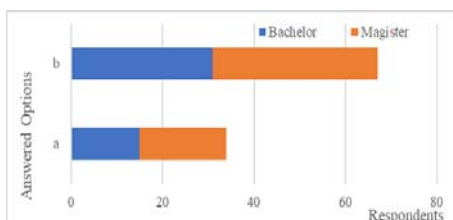


Figure 7 Distribution of Answered Options for Data of Item 19 in Hypothesis 7H

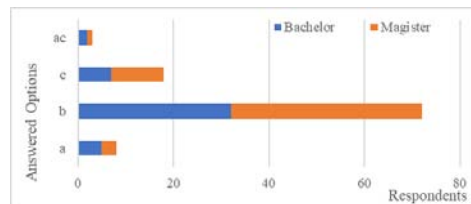


Figure 8 Distribution of Answered Options for Data of Item 20 in Hypothesis 8H

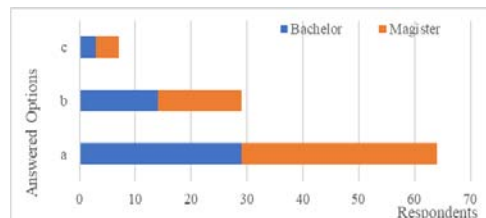


Figure 9 Distribution of Answered Options for Data of Item 23 in Hypothesis 9H

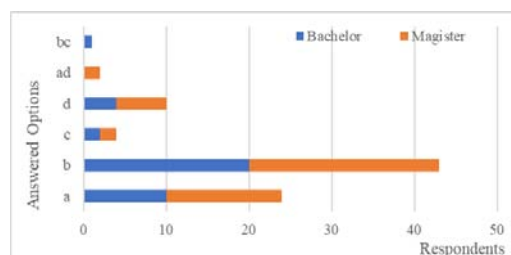


Figure 10 Distribution of Answered Options for Data of Item 26 in Hypothesis 10H

3.1 Conclusions of Hypotheses

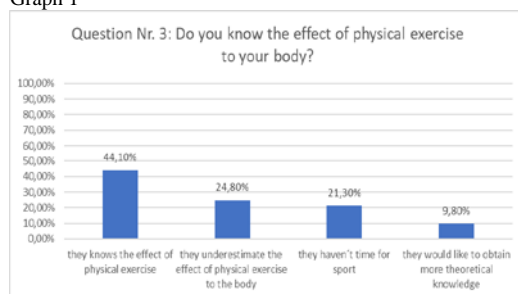
- 1H: "There are not statistically significant dependences between an effect of a physical exercise in favor of a body and type of study of respondents (Bachelor/Magister)."
- 2H: "There are not statistically significant dependences between a season of realized sporting activity and type of study of respondents (Bachelor/Magister)."
- 3H: "There are not statistically significant dependences between a reason for the realization of sporting activities and type of study of respondents (Bachelor/Magister)."
- 4H: "There are not statistically significant dependences between a number of hours devoted to physical activity and type of study of respondents (Bachelor/Magister)."
- 5H: "There are not statistically significant dependences between an interest in Physical activities in physical education and type of study of respondents (Bachelor/Magister)."
- 6H: "There are not statistically significant dependences between frequency of winter sports and type of study of respondents (Bachelor/Magister)."
- 7H: "There are not statistically significant dependences between interest in representing the faculty in sports and type of study of respondents (Bachelor/Magister)."
- 8H: "There are not statistically significant dependences between in active sports in a club for a period of study and type of study of respondents (Bachelor/Magister)."
- 9H: "There are not statistically significant dependences between respondent's approach to active physical activity within a study and type of study of respondents (Bachelor/Magister)."
- 10H: "There are not statistically significant dependences between assumption of realization of respondent's physical activity after graduation and type of study of respondents (Bachelor/Magister)."

Due to achieved results of testing hypotheses, only 2H indicated an existence of statistically significant dependences on the significance level 0.05. In other cases, there were not confirmed existences of statistically significant dependences on the significance level 0.05.

Furthermore, we will present some of the results from the questionnaire, based on percent-frequency analysis and on the basis of the assessment in the form of zero alternative hypotheses of the Chi-squared test with simultaneous opinion on the ten hypotheses (1 H, 2 H, 3 H, 4 H, 5 H, 6 H, 7 H, 8 H, 9 H, 10 H). To these hypotheses, some selected questions from the questionnaire are included in the text, which contained 26 questions in total.

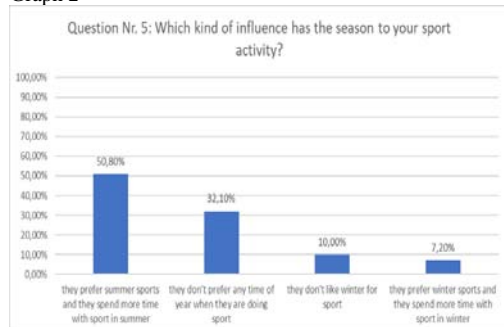
1 H (Question 3: Do you know the effect of physical exercise to your body?) We found that most students (44.1%) know the impact of physical exercise on their organism and therefore they do recreational sports. However, 24.8% of students admit that they underestimate the impact of physical exercise on the body, despite they are aware of its positive impact. Other students (21.3%) state that they know the positive impact of physical exercise, but they do not have time to do sports. The remaining 9.8% of students say they want to gain more theoretical knowledge of this issue during their studies at the Faculty of Education - (Graph 1). Based on the assessment in the form of zero and alternative hypotheses Chi-square test, we conclude that when assessing the knowledge of the impact of physical exercise on their organism among students of bachelor and master studies in assessing in the form of zero hypothesis, there are not statistically significant dependencies, but in assessing in the form of alternative hypothesis, there are statistically significant dependencies.

Graph 1



2 H (Question 5: How do seasons affect your sports activity?). We found that most female students (50.8%) report that they prefer summer sports and spend more time moving during this period. Students who do not care about the season during their sports are represented by 32.1%. Another 10.0% of students say they do not like winter for sport and they would prefer it to be still summer. This is followed by female students (7.2%) who prefer winter sports and spend more time moving in this period - (Graph 2). At the same time, we note that when assessing the impact of the season on sport activities among bachelor and master students in assessing in the form of a null hypothesis there are not statistically significant dependencies, but in assessing in the form of an alternative hypothesis there are statistically significant dependencies.

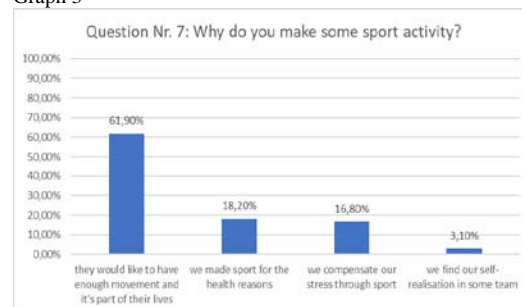
Graph 2



3 H (Question 7: Why do you do sports?). We discovered that the largest percentage (61.9%) are students who are engaged in sports activities because they want to have enough exercise and

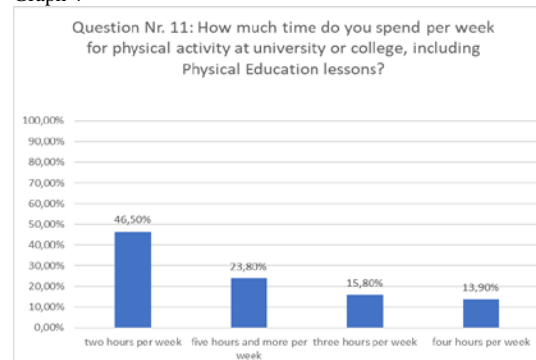
it is part of their lives. They were followed by students who replied: we do sports for health reasons (18.2%). This is followed by students doing sports because they compensate their stress load (16.8%) and then students who said: I find myself engaged in the team (3.1%) - (Graph 3). At the same time, we note that there are no statistically significant dependencies in assessing the null hypothesis when answering the question why do you engage in sports activities among bachelor and master students, but in assessing in the form of an alternative hypothesis there are statistically significant dependencies.

Graph 3



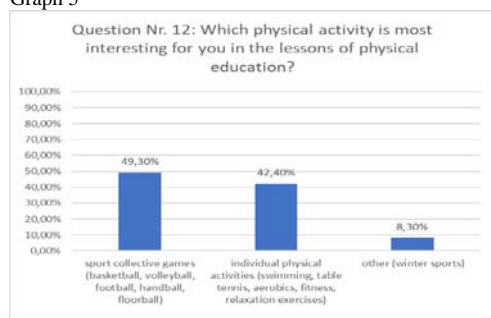
4 H (Question 11: How much time do you spend per week for physical activity at university including physical education lessons?). We found out that most students (46.5%) are involved in physical activity at university only for two hours, which means that they do not do sports outside physical education lessons. However, another group of students (23.8%) are engaged in physical activity 5 hours or more per week. They are followed by female students (15.8%) who are engaged in physical activity 3 hours per week and then female students (13.9%) who are engaged in physical activity 4 hours per week including physical education hours - (Graph 4). At the same time, we observe that there is no statistically significant dependence in the assessment of the null hypothesis when monitoring - how much time is spent on weekly physical activity at a university, including physical education lessons - when assessing in the form of a alternative hypothesis, there are statistically significant dependencies.

Graph 4



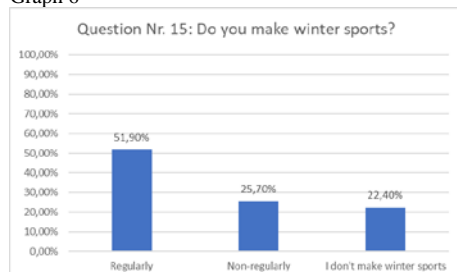
5 H (Question 12: Which physical activities in Physical Education lessons would you be most interested in?). We found out that most students (49.3%) are interested in sports games (basketball, volleyball, football, handball, floorball). Another group of female students (42.4%) would be interested in individual physical activities (swimming, table tennis, aerobics, fitness, relaxation exercises) and female students interested in other (winter sports) are represented by 8.3% - (Graph 5). At the same time we state that when examining which physical activities in Physical Education lessons are the most interesting among bachelor and master students there are not statistically significant dependencies for the assessment in the form of the null hypothesis, but in the assessment in the form of the alternative hypothesis, there are statistically significant dependencies.

Graph 5



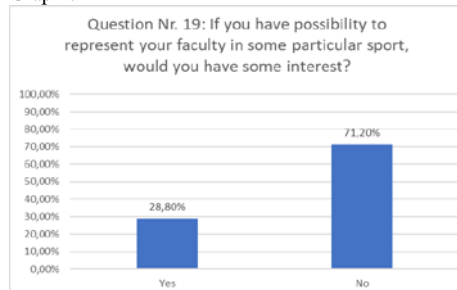
6 H (Question 15: Do you do winter sports?). We found that most students (51.9%) are engaged in winter sports, but irregularly. Only 25.7% of students do regularly winter sports and 22.4% of students do not attend winter sports - (Graph 6). At the same time, we observe that there are no statistically significant dependencies when assessing whether the bachelor and master students of our group are engaged in winter sports - when assessing in the form of a null hypothesis, but when assessing in the form of an alternative hypothesis, there are statistically significant dependencies.

Graph 6



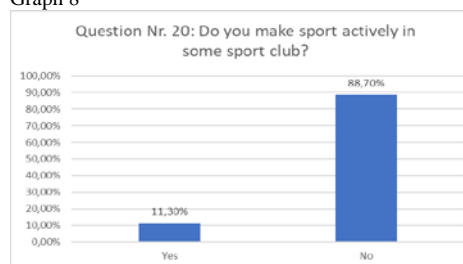
7 H (Question 19: If you were able to represent your faculty in a particular sport, would you be interested?). We found that most students (71.2%) would not be interested in representing their faculty in a particular sport. 28.8% of students would be interested in representing the Faculty of Education in a particular sport (volleyball, basketball, athletics, swimming, table tennis, football, handball, floorball) - (Graph 7). At the same time we state that, if there was a possibility to represent the Faculty of Education of Comenius University in certain sport among bachelor and master students in the assessment in the form of a null hypothesis, there are no statistically significant dependencies, and also in the assessment in the form of an alternative hypothesis, there are no significant dependencies.

Graph 7



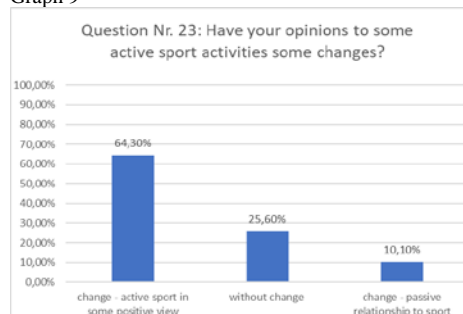
8 H (Question 20: Are you active in any sport clubs?). We found that most students (88.7%) do not play in any sports club and 11.3% of students do sports in sports clubs (volleyball, zumba, ballroom dances, folk dances) - (Graph 8). At the same time, we find during examination of whether bachelor and master students do active sports in clubs - there are no statistically significant dependencies in form of null hypothesis, but there are statistically significant dependencies when assessing in the form of an alternative hypothesis.

Graph 8



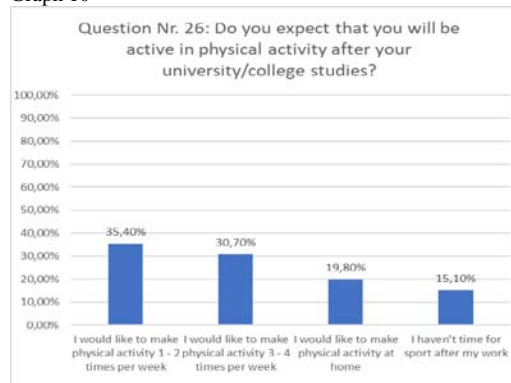
9 H (Question 23: Have your opinions changed about active physical activity?). We found that most students (64.3%) responded that their opinions about active physical activity have changed in a positive direction, other students responded that their attitudes remain unchanged (25.6%). Students whose attitudes towards active physical activity changed to physical passivity are represented by 10.1% - (Graph 9). At the same time, we note that the question - how have your opinions changed to active physical activity - among bachelor and master students in the assessment in the form of the null hypothesis are not statistically significant dependencies, but in the assessment in the alternative hypothesis there are statistically significant dependencies.

Graph 9



10 H (Question 26: Do you expect that you will be active in physical activity after your university studies?). We found that most female students (35.4%) assume that they will perform active physical activity 1 to 2 times a week after graduation. Other students (30.7%) assume that they will perform active physical activity 2 to 3 times a week. The students in percentage (19.8%) responded: I would like to do individual exercise at home at least. A group of female students (15.1%) said that: after work I will not have time to exercise - (Graph 10). Based on the assessment in the form of null and alternative hypotheses of Chi-square test, we conclude that there are no statistically significant dependencies of the null hypothesis in the assessment in terms of assuming among bachelor and master students, if they will be active after graduation, but when considering the alternative hypothesis, there are statistically significant dependencies.

Graph 10



4 Conclusion

In our contribution, we tried to approach the issue of attitude and relation to sport and active physical activity of university students of the Faculty of Education of Comenius University in Bratislava, who study in the study program - pre-school and elementary education. In a sample of 101 students, we used a questionnaire consisting of 26 questions to determine their attitudes and relationship to sport as part of their student and private life. Based on the results of the questionnaire evaluation by percentage-frequency analysis and the results of testing 10 hypotheses using the Chi-square test, we can conclude that the examined university students in their value perception have a mostly positive relationship to sport and to active physical activity.

We found that most of the students (61.9%) know the impact of physical exercise on their organism and therefore do recreational sports. They learned most about the importance of movement for their health at school and from their parents. Most of the students have been engaged in sports or recreational physical activity from pre-school and school age because of the desire to move and to compensate stress. Most students evaluate their health status as good, but they would like to increase the weekly 2-hour activity of physical and sports education during the week to more hours. Students showed interest (63.5%) in participation in the prepared ski and swimming course.

An interesting finding in our observation was that more than 46% of the surveyed students did not perform any physical activities outside physical education lessons realized during their studies at the Faculty of Education. However, most of them engage in irregular skiing sports in winter. A negative finding was that, if it was possible to represent their faculty in some selected sports, most of the students (71.2%) were not interested in this representation due to the high workload during their studies and active participation in temporary jobs. Only 11.3% of the surveyed students are actively involved in a sports club, comparing to over 35% in primary school. More than 63% of students expressed their positive opinion on the change of their attitude towards active physical activity during their university studies. In order to find out what kind of physical activities outside the classroom, students would be most interested in the following order: swimming, hiking, movement games, zumba. On the question - which group of young people would you join - most students favored the answer: with a positive belief in the need for active movement (45.6%). With the answer - doing occasional recreational physical activity, 41.3% of students presented themselves.

A positive finding was that after graduation, the biggest group of students 35.4% expected to perform regular physical activity at least 1 to 2 times a week.

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Primary Paper Section: A

Secondary Paper Section: AK

EMPLOYEES ASSESSMENT OF STRATEGIC MANAGEMENT OPPORTUNITIES IN SPORT FEDERATION

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Abstract. Sports federations are prone to develop a particular program or routine for their goals. From one side, sports federations need to be strategically focused as to increase their strategic management development potential, from another side – employees must to understand what they want to do. The aim of the article is to evaluate employees attitudes towards strategic management opportunities. The investigation shows that sports federation is one of the types of organization that has all the characteristics of a modern organization. Positive evaluation of employees strategic management capabilities is reflected in the research results. It demonstrates the success of ongoing strategic governance as well as favorable opportunities for further strategic management. Individual statements also indicate that employees are very supportive of areas that are consistent with strategy, hierarchy, sport federation performance and resources.

Keywords: strategic management, sport federation, strategic management opportunities.

1 Introduction

Strategic management is a mean of modern management, focused on changes and amendments to be made in the sport organization and within its interactions with the environment in which it operates. There are a lot of benefits of practicing strategic management. Scale studies conducted on this subject showed that organizations which apply strategic management are significantly better than those for which this form of the management has no interest and that employees from the first category are higher motivated (Bradutan, Sarbu, 2012). Also there are a number of limitations in the use of strategic management that shows that this method of management and, like others, is not universal for any situations and problems. In any case, in the current economic context the strategic management is necessary and is a premise for the realization of the sustainable development of an organization, and the economy and society as a whole (Bradutan, Sarbu, 2012; Fred, 2011; Millar, & Stevens, 2012).

Sports organizations are prone to develop a particular program or routine for their goals, a plan such as developing game skills, tactics, or services. The structure of a sports organization is always related to the content of its activities. The four most common factors determining an organization's structure are: strategy, structure, environment and technology. Each stage in the development of a sports organization is a consequence of the past and a cause for the future. For this reason, sports organizations need to be strategically focused as they strategically manage change to increase their strategic management development potential. These changes can go hand in hand with new approaches and modern, new technologies (Bradutan, Sarbu, 2012; Mikalauskas, Šimkus, Brusokas, 2016; Millar, 2015; O'Reilly, Berger, Hernandez., Parent, Seguin, 2015; Raes, Heijltjes, Glunk, & Roe, 2011; Sull, Homkes, & Sull, 2015).

The ability to design and implement effective development and development strategies becomes a key success factor. This statement can be considered universal as it applies to all political, social, economic, technological and technological developments: any actor in any field, capable of devising and implementing the strategy best suited to a given situation, is always more likely to have a greater effect, than would have received if they had not had such a strategy or were unable to implement it. There is a lack of research on the development of strategic management in a modern sports organization, as it is

difficult to understand the role and impact of different sports organizations on the development of sport and thus on the social and cultural life of the community (Grant, Baden-Fuller, 2018; Miknevičiūtė, Valackienė, 2017; Nadeau, O'Reilly, Scott, 2016; Vecchiato, 2015; Whittington, Cailluet, & Yakis-Douglas, 2011).

The objective of the study: explain how sport federation employees evaluating of strategic management opportunities in this organization.

The aim of the study: evaluate employees attitudes towards strategic management opportunities.

The novelty of the study: is that there are not many such specific studies. There is little research to encourage further research into strategic management and capacity building in the context of sports organization staff, with a strong focus on their understanding of incentives and opportunities, specific needs, preparation for alternative strategies or long-term management capacity building initiatives.

2 Theoretical background

2.1 Conception of sports organization

An organization is a community formed or united by people and linked by a common people goal or a joint action program. An organization is made up of people who interact with one another and have certain social roles and status. The benefits of strategic management to sports organizations are interpreted quite differently in the scientific literature. With the growing accumulation of facts and theoretical insights into strategic management in management science, it has been recognized that sports organizations can successfully apply it. Therefore, well-chosen and mutually consistent instruments and strategic planning techniques can ensure the applicability of strategic planning and expand relevant capabilities in the decision-making process of sports organizations. (Coghlan, Rashford, de Figueiredo, 2016).

On the other hand, in the modern world, sport is a heavily impacted part of the global industry, with many public, private and voluntary organizations. A large number of organizations provide services to their creators themselves, some collaborate with other organizations and serve the people working in those organizations or their loved ones, the people who buy their products (Grant, Baden-Fuller, 2018; Mikalauskas, Šimkus, Brusokas, 2016; Millar, 2015).

The classic definition of a sports organization is a social entity involved in specific activities; a goal-oriented, consciously structured system with relatively identified boundaries of activity. There is also another definition of a sports organization – a community of people who regularly exercise and are physically active – athletes and the professionals, amateurs and supporters. R. Daft (2010) describes organization as „social entities that are goal-directed, are designed as deliberately structured activity systems, and are linked the external environment“ (Daft, Murphy & Willmott, 2010, p.10). Another definition of organization is that organization is „a system of consciously coordinated activities or forces of two or more persons“ (Barnard, 1938, p.73). A. Nahavandi and A. R. Malekzadeh (1998) briefly and concisely define organization as a group of „two or more people who cooperate and coordinate their activities in a systemic manner to reach their goals“ (Nahavandi and Malekzadeh, 1998, p.3).

After this set of definitions and explanation of organization it is clear and it is evident that every one of the aforementioned definitions have several factors in common. In all definitions organizations are consisted of at least two or more people, they are goal oriented, they have clear structure, there is a coordination, and boundaries are clearly marked. Sport

organization defined by J.B.Parks & J.Quarterman (2003) says that sport organization is „a deliberately structured and coordinated system of individuals and groups with special skills and talents in the sport industry working together to achieve common set of goals (Parks & Quarterman, 2003, p.150; Brkovič, 2017).

On the other hand, like a classic organization, a sports organization is in society, but not in society, and is not directly dependent on its goals. Otherwise, they would not be able to fulfill their mission of being the creator of modern society. At any stage in the development of society, a modern organization should be considered as one that, beyond the general level of society, seeks to destabilize the current situation in a constructive way and to change it in the direction of positive development. This applies to both classic and modern sports organizations. The most effective sports organizations are those whose structures and systems are adequate to the environment around them (Brkovič, 2017; Mikalauskas, Šimkus, Brusokas, 2016).

2.2 Theoretical possibilities of strategic management of an organization.

Strategy is about making choices that ensure survival of the organization in the face of competition. Strategic management is the primary concern of the organization's senior management, whose role is to define the set of integrated strategic choices that makes a strategy, and which will influence success or failure of the organization. Enterprise strategies consists of a single corporate and one or more business strategy dimensions. In short, corporate strategy tells where organization competes in terms of industries and markets, while business strategy tells how the organization competes within a specific industry or market. Knowing that organization seeks to respond to changes in the environment by means of an adequate strategy, it is good to reflect on how that environment looks like, from the perspective of an industrial firm (Ladner, 2016; Lambaerts, 2017).

Research in the sport context has focused largely on the identification and exploration of the needs within these organizations, as well as focusing on the outcomes of specific strategies (Millar & Stevens, 2012; Millar, 2015). Research in this area serves to highlight the multidimensionality of organizational capacity and to enhance understanding of those dimensions (e.g., human resources, financial, network and relationships, planning and development, and infrastructure and process (Harris, Houlihan, 2014). Perhaps surprisingly, little research in this context has ventured to explore the processes involved in building one or more of those dimensions as a strategy to address organizational challenges or weaknesses (Millar, 2015).

As organizations' environment – and with it the nature of competition – changes, organizations need to initiate strategic change in order to re-align their strategy with changing conditions. Through strategic change a organization aims to redefine the ways in which it competes and thus to secure its long-term growth or development. The critical task for the organization's executive management is to match organizational competences with the opportunities and risk created by environmental changes, in an effective and efficient way. Turbulence in the global business environment has occurred in the past, arguably on different scales, and plenty of examples can be found of companies that managed to use changing environments to their advantage through the deployment of the right strategic practices by its managers (Canales, 2013; Lambaerts, 2017; O'Reilly, Berger, Hernandez, Parent, and Seguin, 2015; Vecchiato, 2015).

Strategy formulation include deciding which business to pursue, how to allocate resources without hostile takeovers and whether to enter international markets. First, strategy formulation phase comprises development of a mission statement, identification of external opportunities and threats, determination of internal strengths and weaknesses, establishing long-term objectives,

generating alternative strategies, and choosing the best strategy to be implemented. Second, is the implementation phase that initiates activities in accordance to strategic plans. This requires firms to establish objectives, devise policies, motivate employees, and allocate resources to execute formulated strategies. O. Furrer, H. Thomas, & A. Goussevskaia (2007), Stacho et al. (2019) stated that without the effective strategy implementation, organizations are unable to reap the benefits of performing an organizational analysis, establishing organizational direction, and formulating organizational strategy. Lastly, is the evaluation and control phase that requires information to be obtained on strategic performance and comparing it with existing standards (Bakar, et al., 2011; Furrer, Thomas, & Goussevskaia, 2007).

In practice, however, strategic renewal initiatives are initiated by actors within the organization. The individuals that contribute to strategy development are not exclusively strategizing executives, but basically any individual in the organization who has access to strategically divergent information and who is responsive to new divergent ideas can initiate strategic change (Valickas, Raišienė, & Arimavičiūtė, 2017). As such, middle management members (Raes, Heijltjes, Glunk, & Roe, 2011), board members and even actors external to the firm such as advisors and consultants (Whittington, Caillaet, & Yakis-Douglas, 2011) can all play a role in driving strategic change (Lambaerts, 2017).

P. Lambaerts (2017) emphasized, that the strategy formulation stage starts with analysis, the outcome of which provides input for specifying the strategic areas in which the organization will operate and how it will operate in order to be competitive. Others takes a more in-depth approach to the strategy process than Ansoff, and argues that the process of strategy formulation is built on the ability to consider and reconcile four major elements, (1) appraisal of present and foreseeable opportunity and risk in the company environment, (2) assessment of the firms unique combination of present and potential corporate resources or competences, (3) determination of noneconomic personal and organizational preferences to be satisfied and (4) identification and acceptance of the social responsibilities of the firm. An importance of a formalized strategy formulation process, which should be managed and not left to chance, although they propose a more complex process, not so much for the sake of complexity itself, - which they admit is not required in all circumstances – but because simple processes might not be sufficient in all situations.

R. Whittington, et al. (2006) proposes an integrative framework for researching strategy formation aiming at the study of the three core elements that are involved in strategy formation – praxis, practices and practitioners – and emphasizes the importance of their interconnectedness and linkage between intra-organizational and extra-organizational levels, the concepts of praxis, practices and practitioners are defined as follows:

- a) Strategy practitioners are the key actors who do the work of making, shaping and executing strategies. The group of strategy practitioners is not just limited to the strategizing executives, but includes all intra-and extra-organizational actors that play a role in the strategy work.
- b) Strategy praxis is what the practitioners actually do, i.e. all the intraorganizational, formal and informal activities that are performed during strategy formation and implement. Much of these activities happen during strategic praxis episodes, e.g. formal meetings, workshops, but also simple, informal conversations.
- c) Strategy practices refer to how practitioners perform praxis. Practices are driven by intra-organizational, multilevel routines, procedures and cultures but also by extra-organizational – for instance sectoral and societal – routines and behaviours, for example industry-specific analysis techniques and societal norms (Whittington, et al., 2006).

P.Lambaerts (2017) argued that according Whittington, practice-oriented studies do not have combine the three elements of praxis, practices and practitioners per definition, but given the

interconnectedness between the three elements, the proposed research framework should reflect and acknowledge the links between these elements. J.I. Canales (2013), S. Cofrancesco (2016) as well admit that keeping a simultaneous focus on the three aspects of the practices-practitioner-praxis framework may prove difficult during research, but add that the practitioner is probably the least well understood and thus should deserve particular attention.

2.3 Methodology and research findings

The questionnaire is based on a study by L.P. Millar (2015) „Capacity Building in a Community Sports Organization“. 41 respondents participated in the survey. Of these, 70.5 percent. (n = 29) work in an organization aged 1-5, 12.2 percent. (n = 5) have been working for 6-10 years. and 17.1 percent. (n = 7) have been employed for more than 10 years. The average of the years worked was 4.63 ± 5.06 years. The study used a Likert seven-point rating scale. SPSS (*Statistical Package for Social Science*) version 17.0 was used for statistical analysis of the study data. The data was rerun before performing a detailed statistical analysis. Ranking scale adapted to questionnaire. For a small sample, the Mann-Whitney and Kruskal-Wallis criterion p was indicated. To determine the relationships, Spearman's correlation coefficient r was calculated. In order to test the reliability of the questionnaire, their internal compatibility indexes (Cronbach α) were calculated. The statements were found to have very good consistency, as the Cronbach α of the whole questionnaire is 0.962 and the internal scales of the individual scales range from 0.658 to 0.955.

Employees are an important resource of the organization, therefore, according to D. Miknevičiūtė and A. Valackienė (2017), communication with the employees of the organization has a great influence on defining directions of strategic changes. D. Coghlan, N.S. Rashford and J.N.Figueiredo (2016) argue that understanding the organization's strategy, shaping and developing it is not only important to the management team, but also affects subordinates and employees.

In terms of organizational resources, respondents were asked to indicate which ones are most important in managing the organization (Table 1). Staff generally agree that human resources (6.73 ± 0.45), finance (6.24 ± 1.16), less valued relationships with external partners (6.17 ± 0.89), or infrastructure management (5.8 ± 0.93). Respondents appreciate the importance of human resources, knowing that the respondents themselves are part of human resources, and this choice is not surprising, but only a few hundred are lagging behind in the planning and development of activities. This fact is surprising in the best sense.

S. Al-Haddad and K. Timothy (2015) state that proper planning helps to understand the difference between where an organization is now (mission) and where it wants to be (vision). Thus, it can be seen that planning is very important in the key stages of the organization's strategy development and is perceived and appreciated by employees. As the least significant area for staff, infrastructure management accounts for only 0.4% of the organization's total revenue, while property depreciation accounts for about 4%, so it is assumed that this area is managed fairly efficiently. There was a statistically significant weak negative relationship between employee seniority in the organization and HR assessment ($r = 0.310$; $p = 0.049$) ($p < 0.05$). The longer the employees work, the more they disagree that human resources are at the heart of the organization.

Table 1. Results of the assessment of the sport federation's resources

Statements	N	Av.	St. D.
Human Resources	41	6,73	0,45
Finance	41	6,24	1,16
Relations with external partners	41	6,17	0,89
Infrastructure administration	41	5,80	0,93
Activity planning and development	41	6,66	0,57

Source: created by authors

When it comes to the level of management capacity in the federation (Table 2), it was found that staff members agree that the skills associated with strategy management are often attributed to, coordinated and validated by the federation executive committee (6.1 ± 1.04). By the way, the research results show that the necessary resources are appropriately allocated for the improvement of management skills (5.27 ± 1.78); properly (5.27 ± 1.4).

This is a positive factor knowing that the federation documents the Executive Committee as one of the highest governing bodies of the federation itself, which meets at least quarterly and decides on the appointment or removal of the Secretary General, federation members, standing or adhoc committees, and locations, team coaching staff, rules and regulations, high-value property deals, establishing affiliates or legal entities, dispute resolution, race fees, budget approval, and more. Rule-based management is a positive feature because, management is a specific type of activity that transforms an unorganized crowd into an efficient, purposeful, and productive group.

Strategy formulation and management can be influenced by organizational culture as well, and finds that four groups of cultural elements have a distinct impact on various stages of the strategic decision making process: (1) myths and sagas affect problem formulation, (2) language systems and metaphors affect the generation of strategic alternatives, (3) symbolism, ceremony and rituals affect consensual understanding and (4) value systems and behavioural norms affect strategic choice. Consequently, organizational culture also influences strategic content (Lambaerts, 2017).

Table 2. Results of the evaluation of the statements on the indicators of management ability

Statements	N	Av.	St.D.
Resources are allocated to improve management capacity	41	5,27	1,78
Managers are convinced that strategy can improve governance	41	5,27	1,64
Employees influence strategic (operational program) decisions	41	5,20	1,49
Employees are convinced that the chosen strategy (action program) is being implemented	41	5,27	1,40
Managers are constantly investing in improving their management skills, strengthening the culture of the organization.	41	5,10	1,62
The strategy (work program) is agreed and approved by the Executive Committee	41	6,10	1,04
The employees are motivated to get involved in the implementation of the strategy (work program)	41	5,05	1,43
Managers, when implementing an organization's strategy (work program), are convinced of the success of that strategy (work program)	41	5,12	1,38

Source: created by authors

Most the employees agreed that the briefing had helped them to understand the strategic concepts that were going to be used during the strategy development, several of them had doubts about the use of such concepts or dismissed them as too theoretical. Some employees emphasized that learning and understanding strategic concepts is more a matter of practice, of "learning by doing".

It is less common to find that employees are properly motivated to actively engage in strategy implementation (5.05 ± 1.43) or are constantly invested in improving management skills (5.1 ± 1.62). All statements were rated positively by respondents. The motivation of employees and their involvement in the realization of the strategy is slightly less evaluated. Because the strategy is associated with an organization that is broadly understood as a system of people-to-people activities that has its own operational goals and means to achieve those goals. In the area of federation management, the motivation of the employees should be improved in order to be more involved in the realization of goals (strategy implementation).

Related to cognition is the aspect of learning, and several scholar link learning to strategy development processes. M.M.Casey, W.R. Payne, & R.M. Eime (2012) see learning activities in

organization in parallel to strategic planning as a determinant of business success. However, the benefits of learning in strategic renewal processes should not be overestimated, since learning rather provides knowledge about the short-term while strategy is about focusing on the long-term. Furthermore, they argue that learning tends to focus on the learner's close environment and that there is a bias toward learning from success rather than learning from failure (Lambaerts, 2017).

The study revealed which strategy management indicators are most important in organizational management (Table 3). Employees generally agree that strategy, in the context of management, is stable and consistent with the functions performed by the organization (5.24 ± 1.2) or that strategy, within the context of management, is unchanging with the declared values of the organization (5.22 ± 1.41). It is rarely confirmed that the strategy chosen in the management context is constant, reliable with the policy pursued by the organization (5.05 ± 1.47) or the strategy, in the management context, is predictable with the operational capabilities of the organization (5.15 ± 1.31).

Table 3. Results of evaluation of statements about strategy indicators in management context

Statements	N	Av.	St.D.
The strategy (operational program) in the management context is aligned with the operational capabilities of the organization	41	5,15	1,31
The strategy (operational program) chosen in the management context is consistent and consistent with the policy pursued by the organization	41	5,02	1,47
Organizational strategy (operational program) in the management context, in line with the declared values of the organization	41	5,22	1,41
The strategy (operational program), in the context of management, is consistent and consistent with the functions performed by the organization	41	5,24	1,20

Source: created by authors

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Organizational politics as the manifestation of interests and attitudes of individuals and their groups, creates a climate for making and implementing strategic decisions in an organization. Most employees acknowledged that the analyses had provided them with new insights, that is, had revealed information or knowledge that had previously been unknown to them individually.

Table 4. Results of the assessment regarding the management of tangible and intangible resources of sport federation

Statements	N	Av.	St. D.
The organization has sufficient resources to implement its strategy	41	5,32	1,37
The organization has sufficient capacity to demonstrate the results of the strategy	41	5,17	1,36
The organization has sufficient means to realize its strategic goals	41	5,39	1,30
The organization has sufficient resources to set requirements to realize its strategic goals	41	5,46	1,12
The organization would have the existing capabilities to implement the strategy	41	5,39	1,18
The organization seeks to implement its strategy in various ways	41	5,10	1,41
Employees have sufficient skills and experience to implement the strategy	41	5,32	1,25

Source: created by authors

In managing the tangible and intangible resources of an organization, it is very important to identify which aspects are most important (Table 4). Employees agree that the federation

has sufficient resources to set requirements for the realization of strategic goals (5.46 ± 1.12) or the federation has sufficient means to realize the strategic goals (5.39 ± 1.3) existing abilities, to implement the chosen strategy (5.39 ± 1.18). It is rarely agreed that an federation seeks to implement its strategy by various means (5.1 ± 1.41) or that the federation has sufficient capacity to demonstrate the results of the strategy (5.17 ± 1.36). It can be positively assessed that federation staff members believe that the organization has sufficient resources, tools and abilities to follow its own business plan, i.e. implement the strategy. Slightly less is appreciated the variety of measures taken to achieve the goals and the ability of the federation to demonstrate the results of its strategy. Thus, it can be seen that the organization does not lack resources, skills and tools, but it should look for different ways to implement the strategy, and to improve the presentation of strategy results.

When evaluating the results of federation management (Table 5), employees agree that they actively contribute to the pursuit of the organization, realize their capabilities and goals (5.29 ± 1.31) or the federation management focuses on providing appropriate opportunities to employees within the organization to realize their goals (5.2 ± 1.1).

Table 5. Indicators for the assessment of claims concerning the results of federation management

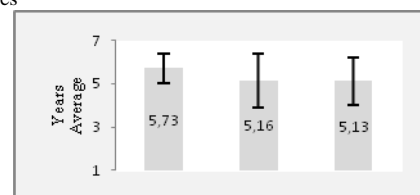
Statements	N	Av.	St.D.
All efforts contribute to the organization's realization of its capabilities and goals	41	5,29	1,31
Organizational management solutions are always focused on meeting the needs of the organization	41	4,85	1,48
Organization management focuses on actions that address management weaknesses	41	4,95	1,40
Organization management focuses on creating the right opportunities for the organization to realize its goals	41	5,20	1,10
Management solutions often enable the organization to try new areas of activity	41	5,10	1,18
Management focuses on continuously stimulating efforts to function effectively within the organization	41	4,98	1,52
Managing an organization enables you to respond appropriately to new challenges	41	4,98	1,42
Management decisions are focused on responding to employee pressures in a timely manner	41	4,39	1,66
Governance is a prerequisite for employees' efforts to solve new problems quickly and efficiently	41	5,05	1,36

Source: created by authors

It is rarely argued that management decisions are focused on responding in a timely manner to employee pressures (4.39 ± 1.66), or federation management decisions are always focused on meeting the needs of the organization (4.85 ± 1.48), however, all statements were rated positively by respondents. The biggest gap exists between the fact that the government makes every effort to achieve the goals of the organization and the least appreciated is the fact that management is focused on the pressures of the employees. This confrontation demonstrates that managers and their efforts are viewed positively by staff, but feel stressed and too little focused on managing it.

Evaluating strategic management steps (Figure 1), strategic analysis (5.73 ± 0.67) is best evaluated, while strategy development (5.16 ± 1.24) and strategy implementation (5.13 ± 1.1) are rated less, but also positively.

Figure 1. Employees evaluation of strategic management opportunities



Source: created by authors

Employees most appreciated the strategic analysis stage, which includes not only the organisation's ability to analyze its external environment, identify its opportunities and threats, but also evaluate its internal potential to use it. Thus, according to the

respondents, federation is able to properly analyze the external and internal environment and use this analysis in the development of the strategy.

According to D. Miknevičiūtė and A. Valackienė (2017), strategy development usually consists of naming a mission in order to achieve the organization's vision and goals, and anticipating actions to achieve the goals set. Thus, we can appreciate that employees have a positive attitude towards defining the federation's vision, defining mission and goals, and outlining actions. Looking at the strategy of federation, it is clear that such employee appraisal is well-deserved, as the federation strategy clearly defines the vision and mission as well as the actions planned to achieve it.

The least favored respondents rated the implementation phase of the strategy, but this is not surprising, as S. Lindsay et al. (2018) argue that strategy implementation is a critical stage in strategic management because, in practice, strategy is more likely to fail at implementation than formulation. Thus, the evaluation of federation staff confirms this authors' assumption. Strategy implementation is considered to be a more complex stage than strategy development, as implementation involves the whole organization and therefore requires coordination and collaboration from all (Sull, Homkes, Sull, 2015); it can be stated that this stage requires not only the input of managers but, so it would be important to inform employees that they also evaluate themselves at the worst of this stage.

A correlation analysis of the Spearman criterion (Table 6) was performed to determine the significance of the interrelationships of the organizational management capabilities. Statistically significant moderate positive relationships were found between strategic analysis and strategy development ($r = 0.630$; $p < 0.001$) and strategy implementation steps ($r = 0.688$; $p < 0.001$).

There is a strong positive statistically significant relationship between strategy development and implementation ($r = 0.843$; $p < 0.001$), ($p < 0.05$). This shows that there is a strong link between federation analysis and strategy development. This can be seen as the better the strategic analysis and strategy development, the better the strategy implementation.

Table 6. Meanings of interrelationships between strategic management stages in sport federation

Interfaces	Strategic Analysis	Strategy Development	Implementation of Strategy
Strategic Analysis	r	0,630**	0,688**
	p	<0,001*	<0,001*
Strategy Development	r	-	0,843**
	p		<0,001*
Implementation of Strategy	r		-
	p		

r – Spearman correlation coefficient, r - the closer to 1 the stronger **; p – statistical significance $p < 0,05^*$; Source: created by authors

There is a tendency for the stages to be interdependent, so that a better strategic analysis would make strategy development more productive and then more successful, under these circumstances, to allow respondents to appreciate the individual stages and the overall strategy and its capabilities.

Table 7. Evaluating the significance of strategic management opportunity stages according to seniority in the sport federation

Factors	N	Av.	St.D.	Krus-Wall. av.r.	χ^2	p	
Strategic Analysis	5	2,9	5,67	0,65	20,48	0,187	0,911
	10	5	5,87	0,68	22,10		
	>	7	5,87	0,82	22,36		
Strategic Development	1-5 year	2	5,04	1,32	20,55	1,163	0,559
	6-10 year	5	5,10	1,13	18,00		
	>10 year	7	5,68	0,87	25,00		
Implementation of Strategy	1-5 year	2	5,04	0,98	20,24	1,529	0,466
	6-10 year	5	4,84	1,43	18,50		
	>10 year	7	5,67	1,29	25,93		

Source: created by authors

Non-parametric Mann-Whitney calculations were performed to determine whether there is a difference between employee function groups (managers, employees) in how they evaluate organizational governance capabilities (Table 7). No significant differences were found between groups ($p > 0.05$). We can confirm that the evaluation of an organization's strategy analysis, development and implementation does not depend on whether the employees in the organization hold executive positions or are ordinary employees of this federation.

Non-parametric Kruskal-Wallis calculations were performed to investigate the length of work and duties of employees in the federation (managers, employees) based on their assessment of federation management capabilities (Table 8).

No significant differences were found between all three groups or between groups ($p > 0.05$). It can be argued that evaluating the analysis, development, and implementation of strategy for both management and employees is independent of the length of service and the duties of employees within the federation.

According to S. Bradutan and A. Sarbu (2012), Valickas et al. (2017) current leadership is impossible without strategic management. The manager needs to know the direction of the company's strategy, understand the influence of changing conditions, monitor the company's internal and external environment and choose the right time to change the strategy. So, strategy is largely a managerial responsibility, a responsibility, and a tool.

Table 8. Assessing the significance of strategic management opportunity stages by work position in the sport federation.

Factors	N	Av.	St. D.	Mann-Whitnes ranks	U	p	
Strategic Analysis	Emp	30	5,78	0,71	22,17	130	0,30
	Man	11	5,59	0,56	17,82		
Strategic Development	Emp	30	5,02	1,36	19,67	125	0,23
	Man	11	5,55	0,73	24,64		
Implementation of Strategy	Emp	30	5,10	1,15	20,75	157,5	0,82
	Man	11	5,20	0,99	21,68		

Source: created by authors

Therefore, it would be natural that when the human factor was triggered, managers would rate their work more favorably than strategic executives, but calculations showed that there were no significant differences between the groups.

In conclusion, the sport federation's strategic management assessment is positive and creates the premise that employees proper evaluation of the federation's strategy. It provides a good opportunity for further self-improvement in strategic management. When describing the individual components of strategic management, it can be seen that the areas that are directly related to the motivation of the employees, the environment and the stress experienced are slightly underestimated.

Consequently, these may be opportunities for improvement in federation strategic management, as analyzing the results shows that employees favor areas of consistency in strategy execution, compliance with statutes, hierarchy, federation performance and strategy, and sufficient resources. The survey showed that these evaluations are not affected by the position or length of work of respondents in this organization.

It is noteworthy that such specific studies are scarce, except for M. M. Casey, W. R. Payne & R. M. Eime (2012), researching the capabilities and capabilities of employees, including organizational, in the strategic management of a strengthening sports organization. There are several problems that need to be actively addressed in the future.

First, research mainly focuses on how certain strategies support the development of strategic management skills in sport organizations. The information provided informs and possibly encourages further research into strategic management and capacity building in the context of sports organizations, focuses on a narrow process of such capacity building, limiting

employee understanding of incentives and capabilities, specific needs, preparation for alternative strategies and immediate long-term management capacity building initiatives.

The second problem is that research in the context of sports organizations tends to focus on capacity building through sport, sport as a tool to build community capacity, and sport for capacity building. Few researchers address issues of organizational strategic management capacity building and evaluation from the point of view of employees in order to meet the needs (weaknesses or challenges) of a particular organization (Casey, Payne & Eime, 2012).

Most often, the activities of sports organizations and federations are perceived as a tool for achieving high levels of sporting performance and improving the lives of the community and citizens, solving social problems, promoting social inclusion, and generating positive social capital.

3 Conclusion

A sports organization is one of the types of organization that has all the characteristics of a modern organization, but specific to it. At any stage in the development of society, a modern organization should be considered as one that, beyond the general level of society, seeks to destabilize the current situation in a constructive way and to change it in the direction of positive development. This applies to both classic and modern sports organizations. In other words, the most effective sports organizations are those whose structures and systems are adequate to the environment around them.

Strategic management is an integral part of successful day-to-day management. Strategic management is a continuous, dynamic, yet consistent process that enables an organization to adapt to external changes and effectively utilize its resources and potential. Strategic management consists of three main stages that are interrelated in many ways, i.e. strategic analysis, strategy development and implementation.

Positive evaluation of employees strategic management capabilities is reflected in the research results. As a result, the averages are high and steady, with standard deviations relatively small, reflecting the integrity of employee opinion. Assessments are not affected by the respondents' working time in the organization or their position. It demonstrates the success of our ongoing strategic governance as well as favorable opportunities for further strategic management. Respondents value strategic analysis best, while its implementation is poorly evaluated. According to separate statements describing strategic management, it is noticeable that areas, that are directly related to employee motivation, environment, and stress, which signal the opportunities and duties of sport federation to improve in these areas, because that are slightly less well evaluated. However, individual statements also indicate that employees are very supportive of areas that are consistent with strategy, hierarchy, sport federation performance and resources.

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INDICATORS OF THE PSYCHOPHYSICAL CONDITION OF AN INDIVIDUAL FOR COPING WITH CHALLENGING CONDITIONS OF SECURITY ENVIRONMENT

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Abstract: The actual corporate environment, reflecting the concept of Industry 4.0, requires managers and leaders with specific leadership qualities. These qualities capture importance in a security environment, especially in the army. Paper deals with the topic of psychophysical condition identification of individual applicants in solving stress situations of the security environment. Research of the psychophysical condition was done in the simulated situation of increased psychophysical stress during courses with X-tream methodology application. X-tream methodology helps to monitor the qualities and potentials of individuals in hard and dangerous contexts. The research sample consists of 286 of course participants, working on managerial and commander positions. The main aim of the paper is to define an indicator of the psychophysical condition by the usage of objective pacification parameters and organism regeneration. Due application of factor analysis two factors with the calming-down trend after physical drain were gained. From both factors, only one reached an acceptable value of Cronbach's alpha ratio. Monitoring and evaluation of the relationship between change trends of the psychophysical condition and human activities in stress situations could serve as a base for choice, preparing and personal development.

Keywords: psychophysical condition, X-tream methodology, cognitive management, army leadership, professionalism, development of leader.

1 Introduction

The current environment, known as Industry 4.0, requires managers and leaders who have specific qualities for leadership (Bennis, 2007). These qualities are becoming increasingly important in security and military environments (Bujak, Šliwa, 2016). Military commanders and leaders face countless challenges and shifting strategic priorities (Morath, Leonard, Zaccaro, 2011).

In addition to the professional knowledge and skills of the leaders, a big emphasis is put on the professionalism in terms of, e.g., personal mastery and systemic thinking (Senge, 2007), conceptual and complex thinking (Robbins, Coulter, 2004; Hroník, 2008), mental maturity and personal fitness (Ullrich, Pokorný, 2012; Kiyosaki, 2016) or specific personality potentials and qualities of security professionals in security environment (Mikulka, Nekvapilová, Pospíšil, 2017; Mikulka, Nekvapilová, Fedorková, 2018; Ullrich, Sládek, 2018). To explore these qualities, it seems useful to use an environment that is close to real demanding and dangerous conditions, for example, a virtual environment (Pallavicini et al., 2016). Related to this are questions that are still topical: "What precisely is leadership in dangerous environments?", and "What distinguishes effective leadership in dangerous contexts?" (Campbell, Hannah, Matthews, 2010).

In the context of Cognitive Management (Ambrozová et al., 2016), we perceive professionalism as a mature, comprehensive competence of an individual. It is based on an individual set of potentials, abilities, and skills, which is manifested both concerning the external professional and systemic environment and the internal environment of the individual. Professionalism reflects the level of mental, personality, psychophysical, and social condition, for example in terms of acceptance of change and proactive adaptation to its consequences, as well as useful coping with stressful situations, especially in decision making, in difficult conditions of military and security environment (Ambrozová, Pokorný, Knap-Stefaniuk, 2019). Professionalism

is related to the potentials for critical, creative, and systemic thinking and to the ability to change models of cognition for decision-making, taking action, commanding and leadership (Ullrich, Pokorný, Sládek, 2018). These qualities of professional managers, commanders, and leaders are of long-term interest.

In our research work, we focus on the detection, identification, evaluation, and development of personality potentials of professionals working in demanding conditions of the military and security environment. We apply a Connatural Management approach that focuses on an individual's natural potentials which form a background of abilities, skills, and functions and are useful and needed for cognition, decision-making, taking action and leadership. They relate to subtle skills, which are a part of the three-dimensional skill model (hard, soft, and subtle skills) of a professional leader. Natural potentials of people significantly influence personal fitness, which is a statement about the current state and balance of the individual's internal environment (Koleňák, Ambrozová, Pokorný, 2016). They are related to the issue of hardness, which is discussed in the military environment in frame of selection and preparation of individuals e.g. for special and extreme tasks (Maddi, 2006, 2010; Clemmer, 2017) self-efficacy, coping self-efficacy and appraisal emotions (Delahajj, Van Dam, 2017), and emotional intelligence (Wildermuth, Vaughan, Christo-Baker, 2013; Zhang et al., 2018; Kozáková, Saliger, 2019; Krishnakumar et al., 2019).

In the pilot research, we focused on identifying personality qualities that relate to the psychophysical fitness of an individual, which is an important indicator for coping with challenging conditions, situations, and specific tasks of the military and security environment (Halpin, 2011). The psychophysical fitness is the result of the interaction of physical and mental processes, states and phenomena. It is related to the balance and harmony of the individual's internal environment. It is about an individual's ability to work with change, manage emotionally tense situations (Krishnakumar et al., 2019), strain and stress (Bartone, 2006; Mallak, 2016). A low level of psychophysical condition may negatively influence decision-making (Starcke, Wolf, Markowitsch, 2008), operating memory, or overall individual performance (Chiesa, Serreti, 2009; Gamble et al., 2018). In this context, there are interesting outcomes concerning, for example, the study of sleep deprivation (Nindl et al., 2002), functional magnetic resonance imaging (fMRI), and psychophysiological measurements in the process of decision-making (Wong, Xue, Bechara, 2011). Psychophysical fitness is related to emotional resilience (Paulík, 2017), which is based on how quickly an individual can regenerate after increased stress, anxiety, etc. It is therefore related to the ability of an individual to adapt to a stress stimulus. Subjective perception of the level of tiredness caused by increased stress, as well as the subjective perception of recovery / regeneration plays an important role (Heidari et al., 2019). Some studies point to personality traits concerning coping with increased strain and stress (Spector, O'Connell, 1994; Leys et al., 2018). It is essential to take into account the multiple demands individuals encounter, the meta-cognitive and emotive processes that affect the resilience-stress relationship, and the conceptual distinction between resilience and coping (Fletcher, Sarkar, 2013).

1.1 Context of psychophysical fitness

The relationship between regeneration and tiredness and its impact on individual performance attracts the interest of professionals involved in education and training processes for these challenging and specific environments (Bouchard et al., 2010; Casey, 2011; Cornum, Matthews, Seligman, 2011; Courtney, 2015).

In the context of psychophysical fitness, it is necessary to consider other parameters that may provide relevant data on the

individual's condition. A possible indicator of the organism's adaptation to strain and stress is, for example, nutritional status (Santana et al., 2012). Physical and body composition play an important role too (physical fitness and body composition characteristics) (Pihlainen et al., 2018).

Another indicator of body adaptation to stress and change is Heart Rate Variability (Kim et al., 2018), which is an indicator of psychophysiological reactivity to stress (Rubaltelli et al., 2018). The issue of Heart Rate Variability (HRV) is an important topic in sports physiology, e.g. monitoring HRV in relation to training intensity and improving body physiology (Dong, 2016), at the same time HRV may be an indicator of possible levels of psychophysical fitness and flexibility (Appelhans, Luecken, 2006; Thayer, Lane, 2009). Measurement of heart rate variability during the night can serve as an interesting indicator of both psychophysical fitness and the degree of excitement of homeostasis after a hard workout (Hynynen et al., 2011).

An important indicator is the value of the morning heart rate, which is relatively stable, because during the day the values may vary depending on mental and physical stress, weather and other variables (Hynynen et al., 2006). Morning frequency depends on the physical and mental fitness of an individual, health condition, age and healthy lifestyle (Soumar, Soulek, Kučera, 2000). In addition, the morning heart rate is a very important indicator of the current state of the body after a demanding previous strain, when its increase by more than 8-10 pulses compared to normal values can be considered as insufficient regeneration from the previous day (Bartůňková, 2014; Weippert et al., 2018). Morning heart rate is related to the issue of useful, optimal strain and the individual's ability to cope with these situations. It is also related to the ability of the organism to regenerate (Ambrozová et al., 2016). Adequate balance between stress (caused by training, professional strain and other specific requirements of the military or security environment) and regeneration is a prerequisite for achieving sustained quality performance (Kellmann et al., 2018).

The issue of HRV is also an important topic in the preparation of military professionals. The effects of prolonged physical activity on resting HRV are studied (Jouanin et al., 2004), sleep quality and chronic stress are addressed (Trousselard et al., 2014). Research activities are also focused on the relationship between physical fitness, HRV and cognitive functions (Hansen et al., 2004). Thayer et al. (2009) draw attention to the important relationship between cognitive performance, HRV, and prefrontal cortex functions.

Programs that focus directly on the Stress Resilience Training System (SRTS) are an integral part of the preparation process. Training app can provide an effective individualized method for mitigating the negative effects of situational and mission-related stress, at the same time eliciting potentially positive effects on performance (de Visser et al., 2016).

The need to monitor the psychophysical state of military professionals is pointed out by Stacey, Hill, Woods (2018), who directly propose the use of wearable physiological monitoring devices. Examples include software that accurately and continuously analyzes a soldier's HRV, updating results at intervals of 10 to 30 seconds. Directly in a combat situation, it can help the field commanders determine who needs immediate medical attention or evacuation (MRI, 2006).

Our work aimed at identifying indicators of the psychophysical fitness of an individual for coping with challenging conditions of the security environment, in the form of objective indicators of the ability to calm and regenerate the organism. These indicators, in the form of indices, reflect the psychophysical fitness of the individual. The research was carried out under simulated conditions of increased complex load, in the environment of courses with the applied X-tream methodology, which allows monitoring the qualities and potentials of individuals in difficult and dangerous situational contexts and conditions.

1.2 Framework of X-tream methodology

The X-tream methodology represents an environment with a sophisticated multidisciplinary methodology of strain variability and testing the quantity and quality level of an individual's performance during changes in their fitness in multiple dimensions and different situations of tasks. It enables the creation of conditions for multiparametric detection and evaluation of indicators related to individual performance and how he or she handles the different demands of task situations. In this sense, the methodology itself and the courses created on it are multidimensional. Although the methods of psychophysical diagnostics require standard conditions for testing, in the context of the X-tream model, the non-standard, natural conditions are targeted (Ambrozová et al., 2015; 2016). The diagnosis is carried out in three phases - before the start of the course - in a sleep mode (1st measurement), during the course (2nd, 3rd and 4th day) and at the end of the course (5th day of the course). To determine objective indicators of the ability to calm and regenerate the body, we used continuous monitoring of heart rate changes and their trends, using the Polar Team System. For statistical data processing, data on trends in heart rate changes, concerning exercise and post-exercise recovery, in a standardized fitness test were used.

The standardized X-tream fitness test consists of three consecutive standardized tests: sit-up, push-up, and the Burpee test. The sit-up test is performed for one minute. Execution: lying with legs apart in the width of the hips (thighs and calves forming an angle of 90°) - crouching from the inside out (hands at the back of the head) bent stretched arms upwards from the inside (hands at the back of the head) - forward bend sit astride, elbows on knees and back to lying position, the backs of hands situated at the back of the head touching the mat in the low position. The legs are fixed with feet on the mat during the test. The push-up is performed for 30 seconds. Execution: starting position - front-support (upright head, hands in the width of the shoulders, trunk, and legs in a straight line, legs touching, max. distance of inner ankles 20 cm) - downward movement (the chest touches the mat) - an upward movement to the front-support. During the exercise the body should be kept firm - upright head, hands in the width of the shoulders, trunk, and legs in a straight line, legs touching. The Burpee test includes the following positions. Starting position - narrow straddle, push-up in squatting position, push-up in lying position (upright head, hands in the width of the shoulders, trunk and legs in a straight line, touching legs, max. distance of the inner ankles 20 cm), push-up in squatting position, and back to narrow straddle. The cycle repeats 20 times. The time is measured in seconds. There is a one-minute interval between the tests. Only complete and correctly performed exercises are included (Ministerstvo obrany ČR, 2011).

Trends for each day are calculated from the TF0 and TF1 heart rate values for an individual day after standardized X-tream fitness tests. TF0 represents the heart rate value immediately after exercise and TF1 represents the heart rate value 1 minute after exercise when an individual performs activities to regain the utmost calm and concentration. Trends for individual days comprised of
$$= \frac{(TF_0 - TF_1)}{TF_0}$$

2 Materials and Methods

The main aim of the paper is to define an indicator of the psychophysical condition by the usage of objective pacification parameters and organism regeneration. The sample consisted of 286 respondents, participants of courses with applied X-tream methodology - men and women aged 21-34 years, working in a secure environment. For statistical data processing, 236 participants were selected. The main selection criterion was the successful completion of the entire course (due to the need for a complete set of data obtained by measuring and testing participants at each stage of the course). All gained data were processed by SPSS Statistics 25 within factor analysis.

Factor analysis as a statistical method work within the correlation of individual variables. The correlation coefficients represent the variable distance within others as the linear dependence of individual variables. The correlation of two chosen variables illustrates their similarity in situations where the other variables are assumed to be constant. If it is possible to explain the dependence of variables using common factors, the partial correlation coefficients are close to zero.

To verify the eligibility of factor analysis, two coefficients must meet the required values. As first, Kaiser–Meier–Olkin (KMO) represents the value is calculated by the rate of squares sum of correlation coefficients and squares sum of correlation and partial coefficients. The value of KMO can move in an acceptable interval (0.5; 1) – more suitable values are close to 1. If the KMO value is under 0.5, factor analysis couldn't be employed. The second is Bartlett's test, which helps to test a null hypothesis. If the null hypothesis is rejected, factor analysis could be used for defined variables (Řezanková, 2010). The value of Bartlett's test must be to 0.05 as an acceptable 5% error. For verification of factor analysis, Cronbach's alpha indicator must be used. This indicator is seen as a reliability coefficient, which is used as a kind of analog of the correlation coefficient. It is possible to reach values in the interval (0;1), where zero is a value explaining the unsuitable correlation of variables. The value closed to 1 describes a higher degree of conformity is reported (Řezanková, 2010; Cronbach, 1951).

3 Results

According to requirements of factor analysis, the KMO test and Bartlett's test of sphericity were applied. The KMO measure for the psychophysical dimension is 0.609. The value of Bartlett's test of sphericity is 0.043 and confirms the usefulness of factor analysis.

Five variables were defined from the performed factor analysis, including complete variables. These are the results obtained by extracting the main components. Of these five variables, the strongest factors were then determined according to the chosen key. The key is to achieve an intrinsic value of at least 1, which is the overall variety of each factor. The first two factors explain almost 68% of the variance. The result of the factor analysis is a rotated matrix, which indicates the strength of individual variables, saturating the identified individual factors. To qualify rotating factor loads as a saturating (supporting) factor, they must be greater than 0.5. To determine the value of the Cronbach alpha indicator, the variables that saturate the factor were taken. However, only a factor that contains at least two positive variables is acceptable (see Table 1).

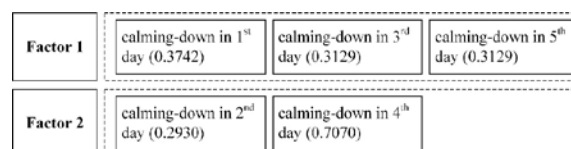
Table 1 Factor loadings of physical stress in individual days

Variable	Factor 1	Factor 2
Physical trend of 1 st day	0.830	0.126
Physical trend of 2 nd day	0.441	0.771
Physical trend of 3 rd day	0.787	-0.007
Physical trend of 4 th day	-0.044	0.941
Physical trend of 5 th day	0.537	0.296
Cronbach alpha	0.425	0.634

Source: own work by authors

Based on the performed factor analysis, two indices for the psychophysical dimension were defined - the factor of the calming trend in 1st, 3rd, 5th day (F1), and the factor of the calming trend 2nd, 4th (F2). Both factors are showed in Figure 1). Although the value of the Cronbach alpha index for the F1 is 0.425 (the acceptable value is 0.5), for the pilot examination it seems to be taken into account, especially because of the so-called trends on individual days and result trends in individual tests. In the case of factor, for F2 Cronbach alpha ratio reaches value 0.634, which could be valued as the middle one (see Table 1).

Figure 1. Factors of psychophysical dimension



Source: own work by authors

Factors of the calming trend affect the relationship between trends in changes in heart rate levels about an individual's workload. Speed and direction after the end of the activity - the trend of calming, or recovery of the body after physical exercise.

For both indices, the sum of the factor scores used represents the weights of the variables. Therefore, their sum must be equal to 1. For the indices ascertained, it is important to establish basic statistical indicators that represent limit values when comparing the results of individual course participants (see Table 2).

Table 2. Descriptive statistics of factors for the psychophysical condition

Variable	Factor 1	Factor 2
Mean	2.241	2.151
Median	2	2
Standard deviation	0.407	0.494
Variance	0.166	0.244

Source: own work by authors

The mean value describes the mean value of the whole research sample. The median sets a threshold where one-half of the participants reached a lower value and the other half reached a higher value. The indices obtained show sensitivity to trend changes in individuals. In addition to specific data on the individual's current heart rate level in a given situation, the change in heart rate, speed, and direction after the termination of activity is significant. It can be considered as a trend of calming, or regeneration of the body after physical stress (see Table 2). The trend range is then in three values: (0;0.1), (0.1;0.2), (0.2;0.3). Table 3 shows the scaling of heart rate trends.

Table 2. Descriptive statistics of factors for the psychophysical condition

	trend scaling
Stability or placid decrease	(0;0.1)
Fast decrease	(0.1;0.2)
Rapid decrease	(0.2;0.3)

Source: own work by authors

The achieved individual factor values can then be an indicator of the higher or lower frequency and intensity of the following aspects, such as the speed of getting into the situation, adaptation and acclimatization, resilience to tiredness and exhaustion, the degree of suggestibility and performance of an individual by change and standard stress.

For the identified factors, the sum of the factor scores used represents the weights of the variables. Therefore, their sum must be equal to 1. If some indicators are not included in the relevant factor, the individual coefficients must be recalculated. For the interpretation of the defined indices, it is important to use the basic statistical indicators, which represent limit values when comparing individual results.

4 Discussion

Based on statistical data processing formulas of two factors were obtained. The calming trend factors cover the relationship between trends in changes in heart rate levels concerning the individual's strain. Speed and direction after the end of the activity - the trend of calming, or recovery of the body after physical exercise.

Relationships between trends of heart rate changes on the first, third and fifth days of the course (Factor 1) and between trends on the second and fourth days of the courses (Factor 2) appear to be significant. Although factor 1 does not have acceptable validity, because the Cronbach alpha value is 0.425 (acceptable value is 0.5). In the context of the pilot investigation, it also appears to take this index into account, mainly because of working with the so-called trends. The trend was calculated as a calming trend on a given day.

The trend range is then in three intervals: (0;0.1), (0.1;0.2), (0.2;0.3). The maximum value of trends achieved by course participants is 0.30, the minimum value is 0.06. When the stability or slight decrease in heart rate is on a scale of (0;0.1). The rapid decline of (0.1;0.2). The rapid decrease of (0.2;0.3). The indices obtained show sensitivity to trend changes in individuals.

In addition to specific data on the individual's TF level in a given situation, the change in heart rate, speed, and direction after the termination of the activity appears to be significant. It can be considered as a trend of calming, or regeneration of the body after stress. This trend does not necessarily depend on the individual's level of training in terms of adaptation to physical stress. Individuals with a slow return to a resting position (mild and moderate decline) then exhibit more tiredness traits leading to exhaustion. Their ability to respond adequately to the task situation differs from individuals who are characterized by a rapid decline.

The factor is sensitive to the change that is reflected in the fourth day of the course. Individuals whose factor result is above the median value (0.166) and above mean (0.172), may have a higher frequency and intensity of the following aspects:

- Faster getting into the task situation, more effective adaptation and acclimatization.
- Resilience to tiredness and exhaustion.
- The lower suggestibility of an individual and his/her performance by change and standard workload.
- The lower vulnerability of an individual as a whole to stress, limit, and extreme stress.

Individuals whose factor result is below the median (0.166) and in particular below the mean (0.172) can be observed a higher frequency and intensity of the following aspects:

- The lower adaptation and acclimatization efficiency.
- Higher risk of tiredness and exhaustion requiring longer time or specific recovery and regeneration conditions.
- The suggestibility of the individual and his / her performance by change and standard workload.
- Increased sensitivity to change, strain and stress, with negative consequences on quantity and quality of performance and a higher potential risk of 'disease'.
- Higher vulnerability of the individual as a whole by stress, limit, and extreme strain, with devastating consequences for an individual, e.g. inability to continue to solve a task, perform the required activity or provide a function, tendency to fail as a whole (breakdown).

5 Conclusion

The X-tream methodology enables to identify individuals who possess not only the appropriate level of partial qualities but also their appropriate combination or organization. This combination allows personality potentials and qualities to be manifested, updated and applied in individual and situational contexts as professional leadership. At the same time, it is a necessary quality for the activities of managers, commanders, and leaders in the current military or security environment.

It turns out that identifying trends in heart rate changes can contribute to understanding the level of an individual's psychophysical fitness. Monitoring the relationships between trends in psychophysical fitness changes, identifying, deciding,

and taking action in solving tasks and coping with situations and processes of change and strain in various conditions and environments provides important data for the selection, preparation, and development of people. These data not only identify the presence and level of the natural potential of an individual but also suggest their cultivation through personal development, as it is related to their psychophysical and mental fitness levels, for example in terms of acceptance of change and proactive adaptation to its consequences, and potentials of critical, creative, and systemic thinking, ability to change cognitive models for decision-making and taking action, etc., which form the basis of professional management and leadership mastery.

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EXPRESSIVES AS RESULT OF PRAGMATIC TRANSPOSITION OF VOCATIVES, ROGATIVES, AND ETIQUETTE SPEECH ACTS

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Abstract: The article deals with three main groups of expressives (everyday communication of Russians) that arise as a result of the pragmatic transposition of vocatives (addresses-anthroponyms), rogatives (questions), and etiquette speech acts. This refers to utterances with the same syntactic structure and vocabulary where the distinguishing features of intonation are the most prominent. The materials of the article can be used for further theoretical studies of transposed speech acts, as well as the creation of communication-oriented Russian textbooks (for Russians and foreigners).

Keywords: addresses-anthroponym, etiquette speech act, expressive, indirect speech act, intonation, rogative (question), transposition, vocative.

1 Introduction

The description of a language, its structure and system should consider not only the patterns and norms of linguistic unit formation but, primarily, their communicative purpose. Today, the linguocentric linguistic paradigm is supplemented by the anthropocentric research paradigm. Modern linguistic studies focus on communication as a set of speech activities aimed at the creation and interpretation of various utterances and discourses/texts. "By transitioning from the linear systemic-structural plane into the pragmatic volumetric space, a linguistic unit obtains new traits, features, and properties essential to communicative activity" [1]. From this point of view, the communicative-pragmatic approach to the linguistic unit description (within the framework of the anthropocentric paradigm) is an integral part of linguistic research. The approach makes it possible to reveal significant features of semantics and pragmatics of words and sentences and uncovers such properties that manifest only in communication and remain hidden in the systemic-structural description [2, 3]. Within this approach, linguists focus on the processes of production and reception of an utterance (a speech act, SA) in various communication areas and situations.

The subject of the article is expressive SA (expressives) in the reaction remarks of speakers (we are interested in utterances with the same syntactic structure and vocabulary) in Russians' everyday speech. These SA are created through pragmatic transposition that consists in the "replacement of one verbal and communicative goal with another within a communicative act" [4]. The purely linguistic factors that help to establish the true meaning of such utterances include intonation.

At this point, it is necessary to clarify. In this article, we do not use the term "communicative type of sentence" [4, 5] as we distinguish between the notions "sentence" (as a syntactic unit) and "utterance" (SA) (as a speech unit). We share the point of view of the linguists who believe that an SA is a sentence actualized in speech [1]. An SA has intonation and is characterized by presupposition and implication, as well as a connection with the parameters of a communicative situation. It is in the SA that the speaker's communicative intention is realized. In view of this, while characterizing communicative processes, one must go beyond the sentence syntax and combine semantic-syntactic and pragmatic descriptions of language by using the notion of SA to denote a basic unit of communication.

One of the most important means of expressing the intentional meaning/illocutive function of an SA is intonation, especially in

cases when lexical and grammatical means in the surface structure of the utterance do not facilitate recognition. For example: *Kakaya kvartira?* [Which apartment?/] (Intonation pattern (IP) – 2) (question) — *Kakaya kvartira?* [What apartment?/] (IP-4) (confusion = "they do not own an apartment") — *Kakaya kvartira!* [What an apartment!/] (IP-5) (positive assessment, admiration). Such SA possess nothing but intonation in their structural expression to transmit speech intention. Intonational variability of an SA is connected to its semantic variability [6, 7].

The relevance of our study is determined by the fact that there is not sufficient research into pragmatic transposition in relation to Russians' everyday communication, as well as the methodological aspect, especially in terms of teaching Russian as a foreign language (RFL) (according to the requirements of the modern communication-oriented learning).

The theoretical basis of the study consisted of works by Russian and foreign scholars in the field of linguistics [8-14] pragmalinguistics, SA theory [1, 15-20], regulation theory [21], and speech etiquette theory [1, 22, 23]. Let us take a closer look at the key terms that were used in this work.

Transposition is realized in the language (on all levels) as in speech. The "Linguistic encyclopedic dictionary" (LED) defines this term as follows, "Transposition (from medieval Latin *transpositio* — rearrangement) is the usage of one linguistic form in the function of another form that is its opposite in the paradigmatic set. In the broad sense, transposition is a transfer of any linguistic form, for example, transposition of tenses (using the Present tense instead of Past or Future), moods (using the imperative in the meaning of the indicative or the subjunctive), communicative sentence types (using an interrogative sentence in the meaning of a declarative sentence), etc. The term 'transposition' is also used to denote metaphors and other transfers in vocabulary" [24]. Various aspects of this phenomenon are described in the works by Russian and foreign linguists [5, 8-12, 21, 25-36]. Linguists distinguish the following types of transposition: lexical, word-formational, morphological, semantic, pragmatic, functional (or stylistic), and syntactic [36]. Currently, this phenomenon is being actively researched in pragmalinguistics (indirect SA) [37-45].

As has been noted above, the subject of our study is pragmatic transposition that results in indirect SA – expressives. Our understanding of transposition is close to the concept by A. Frei who gave a more general meaning to the term than Ch. Bally [8, 10] and A. Sechehaye [12]. He defined transposition as a means of preserving the outer form of a sign despite the change in its function [9]. The scholar linked this phenomenon to the general tendency in the language to the linguistic economy, as transposition allows one form to perform several functions.

There are specific means in the Russian language to realize expressive intentions: *Vot eto da!*; *Neuzheli?!*; *Nu i nu!*; *Vot eshche!* [Dear me!; Oh, really?!; Unbelievable!; No way!] [46]. According to J. Searle, the illocutionary purpose of the person producing/using expressives is "to express their psychological state defined by the condition of sincerity in relation to the state of affairs defined in the framework of propositional content"[16]. It is worth noting that there is no common understanding of the term "expressive" in linguistic works and there is no consensus on the classification of SA data [16, 47, 48]. The list of speech activities that different researchers classify as expressives (regardless of the name of the class) is quite ununiform and includes "gratitude, vocative, anger, complaint, apology, compliment, flattery, insult, indignation, disapproval, approval, insult, wish (blessing, curse, toast), congratulation, dedication, praise, communication of greetings, introduction, greeting, invitation, acceptance gratitude and apology, lamentations, farewell, expression of joy, disappointment, argument, condolences, regret, reproach" [48].

Many linguists prefer not to differentiate the class of expressives [15, 17-20, 49, 50]. For example, N.I. Formanovskaya believes that it is feasible to leave “purely expressive expression of emotions, assessments, attitudes” in the class of expressives [1: 265] and the expressions of speech etiquette associated not with emotions and assessments but with socially defined rules of speech behavior and meant to establish and maintain social and speech contact of interlocutors should be included in a separate class of contactives [1: 266]. Speech intentions of the expressive type (expressives) are also reviewed in the work by E.P. Saveleva [51]. The researcher defines expressives as “acts of expressing of psychological states, feelings being experienced, relationships (regret, contempt, indignation, shame, grief, disgust, anxiety, surprise, pleasure, delight, admiration, approval, etc.)” [51:101]. We believe that, according to the principle of emotion transitivity [52], expressives in addresser’s remarks-reactions may be connected directly to the addressee or may be the result of the “emotional chain reaction” (i.e. when the emotional reaction of C1 (Communicant 1) to the situation or the subject of conversation causes the emotional attitude towards C2 (Communicant 2) due to conformity/non-conformity of C2’s reaction to this event to C1’s expectations).

Since it is not possible to describe all the expressive realizations typical of Russian’s everyday communication within the framework of one article, we will focus on only three groups in which the distinguishing properties of intonation are manifested most clearly. The transposed means in the examples we are considering are 1) vocatives (addresses-anthroponyms), 2) rogatives (questions), and 3) etiquette SA (ESA). The transposing elements are various types of IP, expressive SA are the result of pragmatic transposition. A large role in determining the intentional content of expressives (and many of them are multi-intentional SA) and their emotional component is also played (except for intonation) by such non-verbal means of communication as gestures, facial expressions, glances, and postures of communicants.

Research material: recordings of verbal speech of native Russian speakers, dialogues from fiction (including data from the “Russian National Corpus”), films, television series, Internet communications containing expressive SA (everyday communication).

2 Methods

In the process of researching expressives in everyday communication between Russians, we used: 1) the method of continuous and directional sampling of illustrative material; 2) methods and techniques of direct observation and analytical description of linguistic and speech facts; 3) the method of communicative-pragmatic analysis of language material; 4) methods of opposition analysis; 5) elements of discourse analysis; 6) the descriptive method.

3 The main part

Intonation characteristics are a decisive factor in distinguishing between an address (vocative) and its pragmatic transpositions. Let us examine in more detail the characteristics of the first group of expressives. In the systemic-structural representation of a language, an address is part of the syntax. From this point of view, it is of little interest: it is neither a sentence nor a word combination or a word form. It should be noted that there are already contradictions in various definitions of address. It is defined as “a word or a group of words (word combination, string of words) that name someone to whom the speech is addressed” [53: 715] and as “an intonationally and grammatically independent component of a sentence or a complex syntactical whole that is used to denote a person or an object that is the addresser of the speech” [24: 340-341]. The property of addresses not to enter into syntactic relations with other words is regularly noted but the emphasis is placed on its intonational formalization, which, in our opinion, is devoid of logic, since a word as a nominative level unit does not have intonation. In Russian Grammar (§2059), an address is defined

as “an extended member of the sentence – a name in the Nominative case, possibly with dependent word forms naming the one to whom the speech is addressed. This can be the name of a person, an inanimate object, or phenomenon. In most cases, the address is a noun, however, it can also be an adjective (or a participle)” [14]. However, §2063 states that “an isolated address – by itself or with a participle or an interjection, pronounced with a particular intonation (usually with IP-2 or its modal realizations) can obtain its own communicative significance – it can express an appeal, request, affection, threat, reminder, or surprise: *Ona sela na postel i pozvala nezžno: – Volodya!* [She sat down on the bed and called affectionately, Volodya!] (Chekh.); [Voinitskii]: *Nikakikh u nego net del. Pishet chepkhu, bryuzhit i revnuet, bolshe nichego.* [Sonya]: (onom upreka) *Dyadya!* [Voinitskii]: He is not busy. He writes his nonsense, complains and is jealous, nothing else. [Sonya]: (reproachfully) Uncle!] (Chekh) [14].

As a reactive component of discourse, the address-anthroponym is subject to pragmatic transposition when used individually. This refers to “the replacement of the vocative function by other intentional functions” [54: 63-65]. The transpositions can contain the expression of happiness, delight, surprise, indignation, reproach, etc. We believe that this particular distinction of initiative and reactive functions of address makes it possible to resolve the contradiction that arose in the works of linguists who used the terms “vocative” and “vocative sentence” to denote two units that are different in their intentional content: vocatives (they are realized in the contact initiation phase and are accompanied by vocative intonation) and expressives [13, 55-57].

Transposed addresses-anthroponyms (expressives) are 1) “purely” emotional reactions (not aimed at conscious discourse regulation) with the illocutive function of informing the addressee about one’s emotional state and possible elicit an emotional set in response; 2) emotional reactions that purposefully regulate discourse and are associated with its correction (zone of harmony or disharmony).

In the first case, we distinguish the expressives with intentions that match the name of the emotional set that they are based on (the zones of harmony and disharmony): the expressive with the meaning “happiness, delight”; the expressive with the meaning “grief, despair”; the expressive with the meaning “irritation, anger, rage”, etc. Let us compare the contexts (Table 1).

Table 1: Expressives with intentions that match the name of the emotional set

Anthroponym-address (vocative)	Expressive (a “purely” emotional reaction)
– <i>Lenka!</i> (IP - 2) – <i>pozval on zhenu.</i> [Lenka! – he called his wife.]	Expressive with the meaning “love, affection, tenderness” (emotional set) love, affection, tenderness) Situation: an intimate conversation <i>Bozhe, kak lyubil Pronchatov zhenu! On zadykhsya ot chuvstva lyubvi k zhene i nichego ne mog podelat s soboi, kogda ego potyanulo k nei, i on obnyal ee krepko.</i> [God, how Pronchatov loved his wife! He was choking with a feeling of love for his wife and could not help himself when he was drawn to her, and he hugged her tightly.] – <i>Lenka</i> (IP-2 with a long vowel sound in the stressed syllable, low tone), – <i>prosheptal Pronchatov. /.../ Ona prizhalas k nemu, vsya potyanulas vverkh; potom</i>

	<p><i>zamerla, pritiikhla, pritailas.</i> [- Lenka, whispered Pronchatov. /.../ She snuggled up to him, all stretched out; then froze, became quiet, hid] (V. Lipatov. Skazanie o direktore Pronchatove [The Tale of Director Pronchatov]).</p>
- <i>Kirill!</i> (IP - 2) – <i>pozvala ona.</i> [Kirill! – she called.]	<p>Expressive with the meaning “fear, despair, grief” (emotional set: fear, despair, grief) Situation: husband tells wife about his arrest - <i>Poslushai, Tsilya, - skazal Kirill, v pervye za vse gody nazvav ee po imeni. - Ya zvonyu iz kabineta sledovatelya NKVD. Menya vyzvali k nim. /.../ U nikh order na moi arest.</i> [Listen, Tsilya, said Kirill, calling her by name for the first time in all these years. - I’m calling from the office of the NKVD investigator. I was summoned by them. /.../ They have a warrant for my arrest.] - <i>Kirill!!!</i> (IP-2 with a long vowel sound in the stressed syllable, high tone) - <i>zakrichala na ves zal Tsetsiliya. V trubke uzhe byl otboi.</i> <i>Vot tak v odin iz dnei tretei pyatiletki dva stoikikh bolshevikov pereshli na bolee intimnyi sposob obrashcheniya drug k drugu.</i> [Kirill!!! – Cecilia screamed for the entire hall to hear. A disconnection tone was already playing in the receiver. Thus, on one of the days of the third five-year plan two persistent Bolsheviks switched to a more intimate way of addressing each other.] (V.P. Aksenov “Moskovskaya saga” [Generations of winter]) Having learned about her husband’s arrest, the wife in her remark-reaction switches to a more intimate version of the address – the full form of the name “Kirill” instead of the address by the surname “Gradov” which was customary in that family (a harmonious correction of the discourse is carried out towards increased intimization)</p>

In the second case, the intentions of the expressives do not match the name of the emotional set that they are based on the expressive with the meaning of imploration (emotional set: agitation, despair); the expressive with the meaning of reproach, protest (emotional set: discontent, indignation), etc. Let us compare the contexts (Table 2).

Table 2: Expressives with intentions that do not match the name of the emotional set

Anthroponym-address (vocative)	Expressives aimed at regulating discourse and connected to its correction (the zone of harmony or disharmony) (the intention of the expressive does not match the name of the emotional set that it is based on)
- <i>Mashenka!</i> (IP-2) <i>Idi chai pit!</i> [Mashenka! Come have some tea!]	<p>The expressive with the meaning of objection, reassurance, comfort (emotional set: pity, sympathy, affection, tenderness) Situation: Wife upset by a poor relationship with her mother-in-law <i>Zhenia: - Bolshe ya terpet ne namerena! Vse!.. Tvoya mat menya nenavidit! (plachet).</i> <i>Muzh (obnimayet zhenu): - Mashenka! (IP-4) Nu, detka... perestan</i> [Wife: - I do not plan to endure any more! That's it!.. Your mother hates me! (crying). Husband (hugging his wife): - Mashenka! (IP-4) Come on, baby... that's enough] (transcript of verbal speech)</p>
- <i>Olya!</i> (IP-2) – <i>pozval on zhenu.</i> [Olya! – he called his wife.]	<p>The expressive with the meaning “reproach, protest, imploration” (emotional set: surprise, confusion) Situation: a family argument - <i>Net, ya tebya otlichno ponimayu! - prodolzhal Olga Mikhailovna. - Ty menya nenavidish!.. Ty menya nenavidish za to, chto ya bogache tebya. /.../ Ya dazhe uverena, chto ty zhenilsya na mne tolko zatem, chtoby imet tsenz i etikh podlykh loshadei.</i> <i>Petr Dmitrich uronil gazetu i podnyalsya. Neozhidannoe oskorblenie oshelomilo ego. On detski-bespomoshchno ulybnulsya, rasteryanno poglyadel na zhenu i, tochno zashchishchaya sebya ot udarov, protyanul k nei ruki i skazal umolyayushche:</i> - <i>Olya!</i> [- No, I understand you perfectly! - continued Olga Mikhailovna. “You hate me!.. You hate me for being richer than you. /.../ I’m even sure that you married me only to have the qualification of these dastardly horses”]. Peter Dmitrich dropped the newspaper and stood up. The unexpected insult stunned him. He smiled in a childishly helpless manner, looked bewildered at his wife and, as if protecting himself from blows, extended his hands to her and said imploringly: - <i>Olya!</i>] (IP-2 with a long vowel sound in the stressed syllable) (A.P. Chekhov)</p>

	“Imeniny” [Nameday Party])
– Petya! (IP-2, abruptly) – pozvala ona. [Petya! – she called.]	<p>There are three expressives in the example below:</p> <p>(1) the expressive with the meaning of “reproach, protest” (emotional set: discontent);</p> <p>(2) the expressive with the meaning “reproach, protest” (emotional set: discontent, indignation);</p> <p>(3) the expressive with the meaning “reproach, condemnation, prohibition” (emotional set” indignation, outrage, irritation).</p> <p>Situation: a family argument</p> <p><i>Poluorlov (podskakivaet k synu, vykhvatyvaet uchebnik i bet Fedyu po golove).</i></p> <p><i>Klava Poluorlova. Petya! (IP-2, abruptly) (1) Ostanovis! Poluorlov. Eto zhe chert znaet chto!.. (synu). Raspustilsya sovsem! Moloko na gubakh ne obsokhlo!</i></p> <p><i>Klava Poluorlova. Petya, Petya! (IP-2, abruptly) (2) Opomnis!</i></p> <p><i>Poluorlov. A ty, Gosha, izvini menya, nadoel! Ukhodi!</i></p> <p><i>Klava Poluorlova. Gosha, stoi! Petr! (IP-2, abruptly) (3) Kak ne stydno!</i></p> <p>[Poluorlov (jumps up to his son, grabs the textbook and hits Fedya on the head).</p> <p><i>Klava Poluorlova. Petya! (IP-2, abruptly) (1) Stop!</i></p> <p><i>Poluorlov. The devil knows what!.. (to his son). You have gone completely out of hand! You are still wet behind the ears!</i></p> <p><i>Klava Poluorlova. Petya, Petya! (IP-2, abruptly) (2) Come to your senses!</i></p> <p><i>Poluorlov. As for you, Gosha, I'm sorry, I'm tired of you! Go away!</i></p> <p><i>Klava Poluorlova. Gosha, wait! Petya! (IP-2, abruptly) (3) Shame on you!</i></p> <p>(M. Roshchin. Staryi Novyi god [The Old New Year]).</p> <p>The wife, carrying out the tactics of “soft blockade” in the form of expressives with the meaning of “reproach, protest” (1), (2) (they differ in the emotional component; the repetition of the hypocorism “Petya” is associated with an intensification of the impact on the recipient). Then the wife switches to “hard blockade” using the expressive with the meaning of “reproach, condemnation, prohibition” (3) (full form of the name “Peter”). This transition (as well as the alternation of anthroponymic variants) marks an increase in the threshold of the addresser’s negative</p>

	emotions towards the addressee.
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The modification of the intention, the illocutionary power of expressives of this group and their emotional component are carried out through various types of IP and (with the aim of increasing the impact on the addressee) can be accompanied by the alternation of various anthroponymic options, their phonetic transformations, for example, drawn-out vowels (“Va-a-nyal!”), repetition, a combination of positive- and negative-evaluative sensibilizers (intensifiers of emotions) (“milyi moi”, “lyubimyi”, “parshivets”, “dryan” [my dear, my love, scumbag, jerk], etc.).

The second group of expressives typical of the everyday sphere is connected to rogatives (interrogative structures). In this case, questions (with or without question words) that constitute requests for information and permission serve as the transposed means. The result of the transposition is expressives with the meaning of denial or impossibility; expressives with the intentions of reproach, prohibition; expressives with the meaning of request, reproach. All expressives are accompanied by communicant’s negative emotions and are connected to disharmony in communication. Let us compare the following structures (Tables 3-5).

Table 3: Examples of expressives typical of the everyday sphere

Questions that are requests for information	Expressives with the meaning of denial or impossibility
<p>– <i>Chemu oni tebya nauchili? (IP-2)</i></p> <p>– <i>Plavat s akvalangom.</i></p> <p>[– What did they teach you?</p> <p>– <i>Scuba diving.</i>]</p>	<p>– <i>Chemu oni tebya nauchili?! (IP-4) (=they did not teach you anything; emotional set: discontent, indignation, outrage)</i></p> <p>– <i>Nepravda. Koe-chemu nauchili.</i></p> <p>[– They did not teach you anything, did they?!</p> <p>– <i>Wrong. They did teach me something.</i>]</p>
<p>– <i>Na chto eto pokhozhe? (IP-2)</i></p> <p>– <i>Na aisberg.</i></p> <p>[– What does it look like?</p> <p>– <i>An iceberg.</i>]</p>	<p>– <i>Na chto eto pokhozhe?! (IP-4) (=it does not look like anything; emotional set: discontent, indignation, outrage)</i></p> <p>– <i>Tishe, tishe. Uspokoisya.</i></p> <p>[– What does it look like?!</p> <p>– <i>Shush, shush. Calm down!</i>]</p>
<p>– <i>Komu eto nado? (IP-2)</i></p> <p>– <i>Babushke i mame.</i></p> <p>[– Who needs this?</p> <p>– <i>Grandma and mom.</i>]</p>	<p>– <i>Komu eto nado?! (IP-4) (=nobody needs this; emotional set: discontent, indignation, outrage)</i></p> <p>– <i>Ne krichi, pozhaluista.</i></p> <p>[– Who even needs this?</p> <p>– <i>Do not yell, please.</i>]</p>
<p>– <i>Otkuda ty eto vzyal? (IP-2)</i></p> <p>– <i>Iz entsiklopedii</i></p> <p>[– Where did you learn this from?</p> <p>– <i>From the encyclopaedia.</i>]</p>	<p>– <i>Otkuda ty eto vzyal?! (IP-4) (=it is not true, it is not the case; emotional set: discontent, indignation, outrage)</i></p> <p>– <i>Petka skazal.</i></p> <p>[– Where did you learn this from?!</p> <p>– <i>Petka told me.</i>]</p>
<p>– <i>Kto tebe eto skazal? (IP-2)</i></p> <p>– <i>Papa.</i></p> <p>[– Who told you this?</p> <p>– <i>Dad.</i>]</p>	<p>– <i>Kto tebe eto skazal?! (IP-4) (=it is not true, it is not the case; emotional set: discontent, indignation, outrage)</i></p> <p>– <i>Vchera na sobranii obsuzhdali.</i></p> <p>[– Who told you this?!</p> <p>– <i>It was discussed yesterday at the meeting.</i>]</p>

– <i>Kakoi on spetsialist?</i> (IP-2) – <i>Khoroshii.</i> [– What kind of specialist is he? – A good one.]	– <i>Kakoi on spetsialist!</i> (IP-7) (=he is not a specialist; emotional set: disdain) – <i>I ne govori! Diagnost pravilnyi postavit ne smog!</i> [– Some specialist he is! – Indeed! Could not even make a correct diagnosis!]
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Table 4: Examples of expressives typical of the everyday sphere

Questions that are requests for information	Expressives with the intonation of reproach, prohibition
– <i>Kak ty podstriglas?</i> (IP-2) – <i>Korotko</i> [– What kind of haircut did you get? – Short.]	– <i>Kak ty podstriglas?!</i> (IP-5, low tone) (reproach; emotional set: discontent, indignation) – <i>A, po-moemu, nichego. Stilno.</i> [– What kind of haircut is this?! – Well, I think it is alright. Stylish.]
– <i>Kak ty odet?</i> (IP-2) – <i>Legko.</i> [– What kind of clothes are you wearing? – Light ones.]	– <i>Kak ty odet?!</i> (IP-5, low tone) (reproach; emotional set: discontent, indignation) – <i>A chto takoe?</i> [– What kind of clothes are you wearing?! – What about them?]
– <i>Kak ty s nei razgovarivaesh?</i> (IP-2) – <i>Po skaipu.</i> [– How do you talk to her? – Via Skype.]	– <i>Kak ty s nei razgovarivaesh?!</i> (IP-5, low tone) (reproach, prohibition; emotional set: discontent, indignation, outrage) – <i>A chto tebe ne nravitsya?</i> [– Why are you talking to her in this way?! – What is your problem with it?]
– <i>Chto eto takoe?</i> (IP-2) – <i>Yablochnye chipsy.</i> [– What is this? – Apple chips.]	– <i>Chto eto takoe?!</i> (IP-4, 5) (reproach, prohibition; emotional set: discontent, indignation, outrage) – <i>Podumaesh, skazat nichego nelzya!</i> [– What is this?! – What's the big deal, one can't even say anything!]
– <i>Pochemu ty ne vstretila babushku?</i> (IP-2) – <i>Ya opozdala na vokzal.</i> [– Why didn't you meet your grandmother? – I was late to the station.]	– <i>Pochemu ty ne vstretila babushku?!</i> (IP-4, 5) (reproach; emotional set: discontent, indignation, outrage) – <i>Prosti, ya dumala, chto ona priezhaet zavtra.</i> [– Why didn't you meet your grandmother?! – Sorry, I thought she was coming tomorrow.]
– <i>Zachem ty nadela eto plate?</i> (IP-2) – <i>Khochu poiti v nem na kontsert.</i> [– Why have you put this dress on? – I want to wear it to the concert.]	– <i>Zachem ty nadela eto plate?!</i> (IP-4,5) – <i>A chto ya ne mogu nadet plate svoei sestry?</i> (reproach; emotional set: discontent, indignation, outrage) [– Why have you put this dress on?! – Can't I wear my sister's dress?]

Table 5: Examples of expressives typical of the everyday sphere

Questions-requests for permission	Expressives with the meaning of request, reproach combined with the emotions of discontent, indignation
– <i>Ya mogu pochitat zhurnal?</i> (IP-3) – <i>Da, konechno.</i> [– May I read the magazine? – Yes, of course.]	– <i>Ya mogu pochitat zhurnal?!</i> (IP-4) – <i>Vse, ukhozhu. Tolko ne zlis.</i> [– Can I just read the magazine?! – Alright, I'm leaving. Just don't get angry.]
– <i>Mozhno mne posmotret film?</i> (IP-3) – <i>Mozhno.</i> [– May I watch the film? – You may.]	– <i>Mozhno mne posmotret film?!</i> (IP-4) – <i>Molchu, molchu.</i> [– Can I just watch the film? – I won't talk anymore.]

Utterances with question words (wh-sentences) pronounced with IP-4 can be used as affirmations: *Kto ne lyubit Pushkina?* [Who doesn't like Pushkin?] (=everyone likes him).

The third group of expressives is connected to ESA [22, 23, 50] that serve as the transposed means. During transposition, expressives can be accompanied by both positive emotions (joy, delight) and negative ones (discontent, indignation, outrage, irritation, resentment), realize the intentions of consent, approval, disapproval, objection, refusal, reproach, express irony, ridicule, become playful SA [43-45]. "Meanwhile, their main intention may remain, but it will be 'in the background' or it may be eliminated, giving way to other intentions" [41: 158]. Examples of such transpositions are provided in Table 6.

Table 6: Examples of expressives connected to ESA

ESA	Intention of the ESA	Intention of the transposed ESA (expressive)
Pozhaluista!	Polite reply to an apology or gratitude: – <i>Izvinite za opozdanie.</i> – <i>Pozhaluista.</i> (IP-1) [– Sorry for being late. – Not at all.] – <i>Bolshoe spasibo za pomoshch!</i> – <i>Pozhaluista.</i> (IP-1) [– Thank you very much for your help! – You are welcome.]	Discontent, indignation: – <i>Privet! A vot i ya.</i> – <i>Pozhaluista!</i> (IP-2) <i>Opyat opozdal!</i> <i>Skolko tebya mozno zhdat?!</i> [– Hi! Here I am. – Great! You are late again! How long do I need to wait for you?!]
Otlichnaya ideya!	Approval: – <i>Oznakomilas s Vashim proektom. Otlichnaya ideya!</i> (IP-2) [– I have taken a look at your project. What a wonderful idea!]	Agreement, approval (happiness, delight): – <i>Ya predlagayu, poka zhenshchiny gotovyat obed, sygrat v futbol.</i> – <i>Otlichnaya ideya!</i> (IP-5) [– I propose we play football while the women are cooking lunch. – What a wonderful idea!]
Molodets!	Praise:	Agreement, approval

	<p>– <i>Ochen vkusnyi sup poluchilsya! Molodets!</i> (IP-2) [– The soup was delicious! Good job!]</p>	<p>(happiness, delight):</p> <p>– <i>Davaite vecherom ustroim piknik. Molodets!</i> (IP-2,4) <i>Zdorovo pridumal!</i> [– The four of us should have a picnic. – Good job! Such a great idea!]</p> <p>Ironic reproach, disapproval (discontent, indignation):</p> <p>– <i>On so mmoi ne khochet razgovarivat. Nu vot, pozhilogo cheloveka obidel. Molodets!</i> (IP-4) [– He doesn't want to talk to me. – So, you have upset an elderly person. Good job!]</p>
Spasibo!	<p>Gratitude:</p> <p>– <i>Prekrasnyi vecher! – Spasibo!</i> (IP-2) [– What a wonderful night! – Thank you!]</p>	<p>Objection, disagreement, refusal (discontent, irritation, resentment):</p> <p>– <i>Bros ty eto delo! Vse ravno u tebya nichego ne poluchitsya!</i> – <i>Spasibo!</i> (IP-4) <i>Ya uzh kak-nibud sam reshу, chto mne delat!</i> [– You should just give up! You won't succeed anyway! – Well, thank you! I will figure out myself what I should do!]</p>
Vsego khoroshego!	<p>Well wishes during farewell:</p> <p>– <i>Vsego khoroshego!</i> (IP-2) <i>Priezzhaite k nam letom!</i> [– All the best! Come to us in the summer!]</p>	<p>Ironic wish-agreement (disdain, negative attitude towards the interlocutor):</p> <p>– <i>Ya ne vernus k tebe! Budu podavat na razvod!</i> – <i>Vsego khoroshego!</i> (IP-4) [– I won't come back to you! I will file for divorce! – Good riddance!]</p>
Schastlivogo puti!	<p>Wishing a safe trip, journey:</p> <p>– <i>Schastlivogo puti!</i> (IP-2) <i>Soobshchi, kogda dobereshsya do mesta.</i> [– Have a safe trip! Let me know when you get there.]</p>	<p>Ironic wish-agreement (disdain, negative attitude towards the interlocutor):</p> <p>– <i>Ya ukhozhu navsegda!</i> – <i>Schastlivogo puti!</i> (IP-4) <i>Ne zabludis!</i> [– I'm leaving for good!]</p>
Izvini(-te). Prosti(-te).	<p>Apologies (asking for forgiveness):</p> <p>– <i>Izvini menya za opozdanie!</i> (IP-2) – <i>Prostite menya, Olga Ivanovna!</i> (IP-2). <i>Ya pogoryachilas.</i> [– Forgive me for being late! – I apologize, Olga Ivanovna. I overreacted.]</p>	<p>– Bon voyage! Do not get lost!]</p> <p>Objection, protest (discontent, indignation):</p> <p>– <i>Ya ne mogu uchastvovat v kontserte. Zanyat.</i> – <i>Izvini!</i> (IP-4) <i>Ty dal svoe soglasie. My tebya uzhe v programmu vklyuchili!</i> [– I can't take part in the concert. I am busy. – Well, I'm sorry! You gave your word. We have already included you in the program.]</p> <p>Refusal (discontent, indignation):</p> <p>– <i>Segodnya Vasha ochered ubirat kvartiru.</i> – <i>Prostite!</i> (IP-4) <i>Ya vchera ubiralas!</i> [– Today is your turn to tidy the apartment. – Well, I'm sorry! I tidied it yesterday!]</p>
Pozdravlyayu!	<p>Congratulations:</p> <p>– <i>Pozdravlyayu!</i> (IP-2) <i>Vsekh blag!</i> [– Congratulations! All the best!]</p>	<p>Ironic reproach, disapproval (discontent, indignation):</p> <p>– <i>Perchatki poteryal.</i> – <i>Pozdravlyayu!</i> (IP-4) <i>Eto uzhe tretya para!</i> [– I've lost my glove. – Congratulations! This is the third pair already!]</p>
Privet!	<p>Greetings:</p> <p>– <i>Privet!</i> (IP-2) <i>Kak dela?</i> [– Hi! How are you?]</p>	<p>Objection, reproach (surprise, disapproval, indignation):</p> <p>– <i>A pochemu ty zdes?</i> – <i>Privet!</i> (IP-4) <i>My zhe dogovarivalis! Ty chto, zabyla?</i> [– And why are you here? – Hello! We had an agreement! Have you forgotten?]</p>
Zdravstvui(-te)!	<p>Greetings:</p> <p>– <i>Zdravstvuite, Anna Sergeevna!</i> (IP-2) [– Hello, Anna Sergeevna!]</p>	<p>Objection, refusal (discontent, indignation):</p> <p>– <i>Segodnya ty zabiraesh rebenka iz detskogo sada.</i> – <i>Zdravstvuite!</i> (IP-4) <i>U menya vecherom</i></p>

		<p><i>irenirovka. Ya zhe tebe govoril.</i> [- Today you are picking the child up from the kindergarten. – Well, hello! I have a training session in the evening. I have told you.]</p>
Do svidaniya!	<p>Farewells: – <i>Do svidaniya, Anya! (IP-2)</i> [- See you, Anya!]</p>	<p>Refusal, farewell (resentment, indignation, outrage): – <i>Ya khochu poluchit svoi dengi.</i> – <i>Do svidaniya! (IP-2, 4)</i> [- I want to get my money. – See you!]</p>
Soboleznuyu!	<p>Condolences: – <i>U menya vchera babushka umerla.</i> – <i>Iskrenne soboleznuyu! (IP-2)</i> [- My grandmother died yesterday. – My sincere condolences!]</p>	<p>Ironic compassion, condolences (pity for the addressee, negative attitude towards the situation): – <i>Svekrov s vami zhivet?</i> – <i>Da.</i> – <i>Soboleznuyu! (IP-4)</i> [- Does your mother-in-law live with you? – Yes. – My condolences!]</p>

In most cases, transposed ESA are linked to the violation of principles of cooperation and politeness and constitute risky communicative actions.

Pragmatic transposition is an integral part of Russians' everyday communication. The reviewed examples of expressives represent a small part of such realizations in speech that require further detailed systematic description. They are all active, activity-related, pragmatically significant units that participate in communication regulation. Mastering the mechanism of pragmatic transposition and various types of IP that help to determine the true intentional meaning of transposed SA is an important requirement for the formation of communicative competence of Russian language speakers. From the point of view of the communicative-pragmatic approach, it seems promising to describe all ESA that are typical of everyday (and more generally – routine) communication and are realized through intonation within the new version of Russian grammar [2, 3] (based on the list of nominations of speech intentions [51]).

The results obtained during the study can be used in RFL classes to teach using communication-oriented methods. “The most difficult aspect for foreign students is the intonation of live communication as the notional and expressive aspects of intonation are interconnected. Native language speakers use intonation intuitively without even thinking how to express joy or anger, discontent, insistence or request. For a foreigner, it is very difficult to note jokes, irony, disappointment, distrust, doubt, etc. in the Russian language. At the advanced stage, one must teach foreign students to express these intentions with the help of intonation by using IP-4, 5, 6, 7 in different speech situations” [58: 2900-2911]. Students' inability to distinguish the types of IP in SA with the same lexical and syntactic composition (and, consequently, the intentions of these SA) leads to communicative failures. We proposed textbooks that

will help foreign students to learn to understand the meaning expressed by the texts of monologues and dialogues, to read correctly, and to talk about various life situations [59-61].

4 Conclusion

The factual evidence and the results of the analysis can be used to create communication-oriented Russian textbooks (for Russians and foreigners), as well as serve as the basis for comparative studies of expressives in various situations of everyday (and more generally – routine) communication in other linguocultural areas. Today, the dictionary of transpositions of ESA is in development (by T.B. Nesterova) (it is addressed to a wide range of readers), as well as workbooks for foreigners learning Russian (Levels B1-B2, B2-C2) (by T.B. Nesterova, M.N. Shutova, and T.V. Lyashenko).

There is a clear need for further investigation into pragmatic features of intonation in relation to everyday (and more generally – routine) communication of Russians.

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QUALITATIVE ASPECTS OF RATIONALISATION OF COMPANY MANAGEMENT

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Abstract: The aim of the article is to analyze the production process of cups, which are prizes for outstanding athletes, eliminate the causes of incompatibility of the product contributing to financial losses and generation of production waste and use of natural resources, and propose preventive actions. The methodology of solving a problem of the inappropriate amount of glue in the top of products consisted in the ultimate data connection coming from the Pareto graph - of Lorenzo, the session of the brainstorming, the diagram of resemblance and analysis 5 x Why? The analysis shows that the reason for the inadequate amount of glue at the top cover is the poor technical condition of the machinery park in the company and the lack of proper maintenance procedures for machinery and equipment. The presented methodology of solving the problem of non-compliance in the product is universal. There is a possibility of implications of the presented method of reduction or elimination of product non-compliance in manufacturing companies. The originality of the study was expressed in the methodology of solving the research problem. The use of a single quality management tool or method does not provide assurance that the problem will be solved and that the non-conformity of the product will be significantly reduced and eliminated. The original character of the study also manifests itself in the author's approach to the issue of product quality assurance in the context, not only financial or image, but also in the concept of sustainable development.

Keywords: quality; management; sustainable development; production waste

1 Introduction

The term "quality" is closely linked to continuous improvement and the company's aspiration for excellence. This results in fewer mistakes and mistakes as well as more satisfied customers (Lisiecka, 2009; Hamrol, 2008; Czubała, 2006; Haffer 2003). Quality is a very important and strategic component of competitiveness (Pacana, Bednarova, Pacana, et al. 2014; Priede, 2012). Competitiveness of industrial enterprises is a predisposition to development, achieving profits, benefits and building a competitive advantage (Ślusarczyk, Szajt, 2013; Dobięgała-Korona, Kasiewicz 2000). Companies that want to be competitive on the domestic or foreign market should constantly strive to implement modern solutions and ensure high quality of the offered products. It is important to strive for this at any time and in any area of the company's operation, because there are no ready-made solutions or model models of conduct that would guarantee each organization a permanent, competitive advantage and thus achieve market success (Brzóska, 2014; Korzyński, Dzierwa, et al., 2009; Bielski, 2007).

Improvement of the company seems to be one of the key methods of improving the organisation's operations, creating added value, strengthening its potential and as a result of achieving the planned objectives (Kacała, Wierzbięca 2015; Ślusarczyk, Szajt 2013). Improvement of processes consists in elimination of activities that do not create added value for the product, implementation of activities that increase the effects and satisfaction of customers and those that improve communication between persons involved in the implementation of a given process and the introduction of control measures in order to reduce the number of errors arising in individual stages of the process or preventive measures. Improvement also consists in drawing conclusions from analyses and audits carried out, followed by the introduction of corrective or preventive actions. All steps are carried out in order to meet the requirements of customers (Czerwińska, Pacana, et al. 2018; Nogalski, 2010; Bhuiyan, Baghel 2005).

In a situation in which there are inconsistencies in the manufactured product, the product does not meet the customer's requirements and thus generates additional production costs. It is therefore important to identify the cause of this phenomenon (Pacana, Bednarova, Liberko, et al. 2014; Ebenzer, Daradasn,

2011). Inadequate product quality, irregularities at the product design stage and in the production cycle are a source of additional and therefore unforeseen financial losses for the company (Hamrol, Mantura, 2002) and have a negative impact on the environment and social environment, generating production waste that depletes environmental capital and uses natural resources (Martin, Schouten, 2012; Belz, 2010; Peattie 1995).

The aim of the article is to analyze the process of cup production, eliminate the causes of product non-compliance contributing to financial losses and generation of production waste and use of natural resources, and propose preventive actions.

2 Formation process of cups

The company produces: figures (cast and plastic), diplomas (paper and wooden), cups, medals (cases, emblems and ribbons), trophies (wooden, crystal, plastic and glass), as well as subligaves. Within 2 quarters of 2018, the largest number of complaints from customers concerned cups, therefore, it was decided to introduce corrective and corrective actions in their production process. The technological process of the Cup consists of the following stages:

- delivery and storage,
- machining,
- assembly,
- packaging.

For the production of cups are used ready-made metal elements ordered from the supplier and stone (marble) used as the base of the cup. The metal parts are delivered to the company in parcels containing: foot, rod with caps, cup and top extension. Depending on the dimensions of the elements and the size of the order, there are 10 or 25 pieces of each element in the set.

The stone is delivered to the enterprise in the form of blocks. After checking the conformity of the goods with the order, it is transported to the warehouse.

A stone plate is subjected to mechanical processing, which is pre-cut into smaller parts using a saw. Then two holes of different diameters are drilled in each cube to fix the marble cube with metal elements. The last step in the processing of marble cubes is grinding and chamfering.

The assembly of the cup begins with the connection of the rod to the marble base by means of a cap. The next step is to tighten the foot, extension and cup. Finally, the cap is screwed on. Table 1 shows the components of the cup and the material from which they are made.

Table 1: Cup components

Item number	Element name	Material
1.	Goblet	Metal
2.	End caps	Metal
3.	Upper slip	Metal
4.	Bar	Metal
5.	Stopa	Metal
6.	Base	Marble

Ready cups are packed in cardboard boxes. Previously, they are protected with a bomb film, which is wrapped around the product. Boxes with products are transported to the warehouse.

3 Methodology – analysis of problems arising in the process of cup production

The cup manufacturing process includes: delivery, storage of components, mechanical processing of marble, assembly, packaging and storage of finished products. It is important that the bowl is properly made and passes through all stages of the production process without interruptions. On the basis of data from November 2018 included in Table 2, it can be seen that cups manufactured by the company are the most frequently advertised product.

Table 2: List of advertised products in November 2018 in the analyzed company

Product	Number of manufactured products [pcs]	Number of non-compliant products [%]	Number of complaints [pcs]
Cast figures	39 000	9,1 %	4
Plastic figures	20 000	8,0 %	77
Paper diplomas	8 000	0,51 %	1
Wooden diplomas	15 000	5,2 %	43
Cups	88 000	3,6 %	598
Models	92 000	5,6 %	114
Trophies	70 000	3,2 %	8

The number of complaints in November 2018 amounted to 598 cups, which is more than 70% of all complaints received in the analyzed month. Table 3 presents a list of the advertised defects of cups.

Table 3: List of incompatibilities of advertised cups

Number	Reasons for complaints	Description	Number of complaints
1.	Wrong order of the assembly	Slip being on the spot bases of the cup	107
2.	Disengagement of components	Disconnection sie of building blocks of the cup	99
3.	stains on the cup	Stains of glue on the product	37
4.	Damage	Visible upholsteries of the goblet	87
5.	An end cap is missing	Twisting off sie of goblet	5
6.	No coaxiality	No perpendicularity of the rod in relation to the base, which causes the cup to tilt	18
7.	Wrong elements in the cup	Mistaken cup components	53
8.	Inappropriate amount of glue by the upper end cap	Spilled glue inside the cups of the wok blanking plugs	156
9.	Rusting oneself elements	Visible rust in the goblet and in the base	36

It can be noticed that the most common cause of the complaint is the inadequate amount of glue at the top cover. With the help of the quality management tool, which is the Pareto-Lorenz analysis, it is possible to indicate which of the reasons for complaints are the most important. This analysis, together with other tools, will allow us to find out the cause of the nonconformity of products. For this purpose, the data in Table 3 should be arranged in a descending order and the share of non-compliance in the total number of defective products and their cumulative value should be determined (Table 4).

Table 4: Orderly number of non-compliant products and calculated cumulative values

Number	Disagreement of the product	Number of not harmonious products	Participation of the disagreement in the total of not harmonious products	Cumulative number of non-compliant products	Cumulative share of non-compliant products
1.	Inappropriate amount of glue by the upper end cap	156	26 %	156	26 %
2.	Wrong order of the assembly	107	18 %	263	44 %
3.	Warming up of elements	99	17 %	362	61 %
4.	Damage - upholstery	87	15 %	449	75 %
5.	Wrong elements in the cup	53	9 %	502	84 %
6.	stains on the cup	37	6 %	539	90 %
7.	Rusting elements	36	6 %	575	96 %
8.	No coaxiality	18	3 %	593	99 %
9.	An end cap is missing	5	1 %	598	100 %

Figure 1 shows the Pareto-Lorenz graph for the number of non-compliant products based on the data from Table 4.

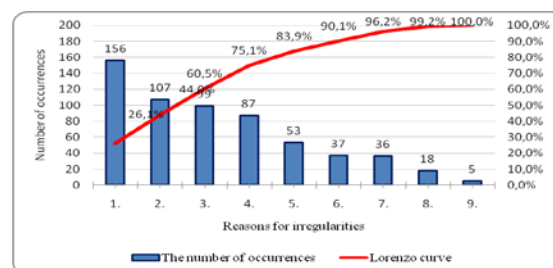


Figure 1: Pareto - Lorenz graph of the disagreement of the product (Documents provided by the company, unpublished materials)

During the complaint, the following defects were indicated: lack of a cap, upholstery, incorrect order of cup elements and excessive amount of glue at the upper cap. Not all causes of the complaint can be repaired without replacing the elements. These include excessive glue at the top cover and upholstery, which can only be improved by replacing damaged parts. Using quality management tools and methods, it is possible to effectively eliminate the causes of non-conformity of products. Based on the Pareto-Lorenz analysis, 44% of the types of defects (four out of nine defects) generate 75% of all non-conformities. In order to improve, it is necessary to analyse the following defects: inadequate amount of glue at the top cover, incorrect assembly sequence, loosening of the elements and damage - upholstery. Due to volume limitations, the article analyzes the unsuitable amount of glue at the top cap of the cup.

The matrix presents tools and methods of quality management, which can be used to eliminate the causes of product non-compliance (Table 5).

Table 5: Matrix of tool proposals and quality management methods for significant defects occurring during the production process

Problems	Tools and methods of the quality management									
	Diagram Ishikawa	Pareto graph - of Lorenzo	Test sheets	Time sheets	Brainstorming	Diagram of the relation	Diagram of the tree	Diagram of decision-making processes	Diagram of resemblance	5xWhy
Inappropriate amount of glue by the upper end cap	X			X	X	X	X	X	X	X
Wrong order of the assembly	X		X	X	X	X			X	X
Warming up of elements	X	X			X	X	X		X	X
Damage - upholstery	X	X			X	X			X	X

Table 5 presents the proposed methods that can be used to improve the production process for the most significant non-conformity of the advertised products. The use of appropriate tools or methods will help to find the root causes of non-compliance and then propose remedial measures.

In order to improve the production process and eliminate key incompatibilities, brainstorming sessions, similarity diagram and 5xwhy were used. The brainstorming began with the gathering of all team members in the hall. Then the subject that sounded was clarified: "Non-compliance of the product - inadequate amount of glue at the top cap of the cup. The quality manager presented the problem, assumed the role of the chairman and reminded the basic principles of the brainstorming session, such as: presenting ideas and their transcript, listening to each other, lack of criticism, the possibility of modification and improvement of ideas by team members. The whole group analyzed the problem, presented their ideas, which were written on the board. The focus was on generating a large number of potential causes of non-compliance. The last stage of the brainstorming session consisted in juxtaposing and selecting the best ideas that cause the greatest losses. As a result of the assessment, solutions were obtained, which were placed in the similarity diagram. The ideas listed in the diagram should then be analysed accordingly. A similarity diagram is shown in Figure 2.

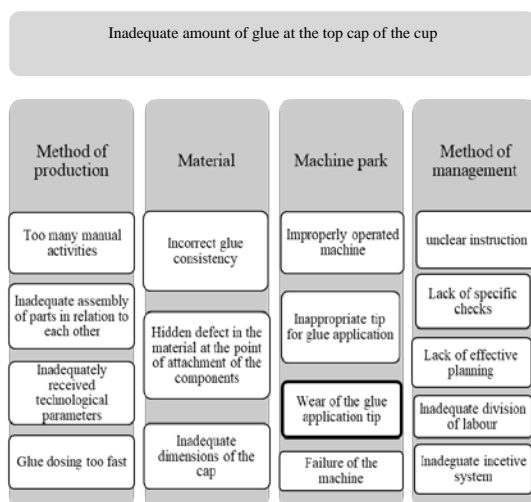


Figure 2: Similarity diagram for the problem of inadequate amount of glue at the top cap of the cup

The potential cause of the analysed inconsistency was considered to be the cause on the side of the machine park - wear and tear of the tip applying the glue and its too rare inspections and replacements. Based on the developed diagram, in the next step of the problem analysis you can use the "5xWhy?" (Figure 3).

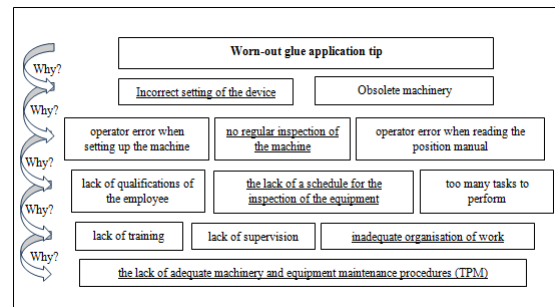


Figure 3: Analysis 5 xWHY? for the problem concerning using the end for putting glue

On the basis of the kinship diagram (Figure 3) the analysis "5xWhy?" was made. When analysing the potential causes of inadequate condition of the components of the machine for bonding the components of the product, the lack of proper machine and equipment maintenance procedures (TPM) has been identified as the key reason.

4 Suggestion for improvement

Most of the reasons, causing the tested product non-conformity, are related to the lack of appropriate procedures for maintenance of machinery and equipment and poor technical condition of machinery in the company. For this reason, it is recommended to implement one of the lean management methods - TPM (Total Productive Maintenance) - first on the workstation and then throughout the entire company. Preventive actions should be carried out in two areas: human and machine. The task of TPM, in the first area, will be to increase the level of effectiveness of employees by broadening their knowledge and skills - which will be tantamount to increasing the degree of their responsibility. According to the method adopted, employees will become more involved, will acquire the ability to correctly interpret situations arising within their workplace, so that they will be able to make appropriate decisions on their own. In the field of machinery, the activity of employees, in addition to their existing duties, should focus on maintaining equipment in a state of high availability. In addition, the maintenance department should be able to obtain information from operators on the current state of the machine park in order to plan the department on an ongoing basis. By getting to know the machines properly, production workers, maintenance workers and technologists will be able to draw up improvement projects (e. g. Kaizen ideas) in order to facilitate maintenance or improve the functioning of the machines. Thanks to training, maintenance staff should change their attitude from reactive to predictive machine operation, which will translate into increased machine availability and reliability, which directly reduces production costs and contributes to reducing unnecessary use of natural resources.

5 Conclusion

Progressing technological development of the modern world and growing consumerism of societies are the cause of degradation of the Earth's natural resources. Due to the fact that all products consume energy and natural resources during the production processes, thus leaving a footprint in the environment, production companies should provide technological and production solutions that minimize the adverse impact of production on the ecosystem.

In the analyzed production process, not all non-conformities of the product can be removed or repaired. An example of this type of non-compliance is the inadequate amount of glue at the top cap, which, if too much glue is used, makes it impossible to

repair the product and thus contributes to the increase in production waste. In order to eliminate the problem studied, an analysis of potential causes of incompatibility was carried out, brainstorming sessions were carried out, a similarity diagram and the 5xWhy method were made. The key reason for the inadequate amount of glue in the upper part of the cup was the poor technical condition of the glue dispenser and the lack of proper maintenance procedures.

In order to prevent the occurrence of product inconsistencies caused by the poor condition of the machine park, it was recommended to implement the TPM method in the company. The aim is to maximise the efficiency of machines and equipment by maximising the time available for the production of compliant products.

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COMMUNICATIVE COMPETENCE IN PRIMARY ENGLISH TEXTBOOKS – A CONTENT ANALYSIS

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The paper includes research results gained as a part of the project APVV-15-0368 Practice in the centre of the subject field didactics, subject field didactics in the centre of preparation for practice

Abstract: Communicative competence in foreign language education is one of the most frequently used terms in the modern world. Despite that, its development at the primary level of education in Slovakia is quite an unexplored phenomenon. The qualitative inquiry gives an insight into how communicative competence is developed at the primary level of education. A content analysis of three English textbooks used in Slovak primary schools reveals the presence of individual aspects of communicative competence and the biggest preferences with the most used activities for the practice. The results of the study show which of the components of communicative competence are represented the most and the least and also which of the three textbooks covers communicative competence the most complexly.

Keywords: communicative competence, English textbooks, content analysis, qualitative research

1 Introduction

Foreign language education has been going through great changes in the recent decades. The communicative period of teaching languages offers a great variety of methods and approaches for the teachers to choose from (Howatt and Smith, 2014) and provides hundreds of activities for the learners to master the target language as precisely as possible (Richards and Schmidt, 2014). Mastering communicative competence has become one of the foremost goals of foreign language education. Being able to use grammar and vocabulary well when filling exercises in textbooks is an important part of the teaching process, but preparing the learners for the everyday situations outside the artificial settings of the classroom has been becoming more and more important. Communicative competence encompasses the theoretical knowledge of language with the actual skill to use that knowledge well in real interaction in the real world (Richards and Schmidt, 2014).

As learning English as a foreign language in Slovakia is compulsory from the third grade of primary school (Zákon č. 245/2008), institutionalized education plays a significant role in learners' overall language studies. Thus developing communicative competence should start from the very beginning of the education process. The national and international reference documents define communicative competence with all its components required at the proficiency level A1 (= primary level education) (ŠPU, 2011; Council of Europe, 2001; Trim, 2001). The teaching process itself should reflect that and develop all the aspects of the communicative competence to the greatest possible deal.

The phenomenon of developing communicative competence at primary level of education is an unexplored topic in Slovakia. The study therefore places the initial foundations for a possible future investigation, which may result in not only understanding education in Slovakia but also making it more effective. The qualitative inquiry examines English textbooks used in Slovakia by content analysis. It aims at finding out how selected English textbooks develop communicative competence and whether they provide enough practice for the learners to be prepared for situations outside the classroom at the given primary level.

2 Theoretical Background

Understanding communicative competence to its core requires us to investigate it from its creation. The different methodologies in teaching foreign languages have brought different viewpoints on

the important aspects of successful language education. The current trends provide an insight into what to teach and how to do it in order to reach the most effective results. The reference documents, in addition to that, specify every single detail of the selected proficiency levels. Herewith, we may understand every aspect of communicative competence and its important role in foreign language education itself.

2.1 The Changing Teaching Trends

The beginnings of modern foreign language education date back to the 1750's, when teaching English (among other languages) became popular for the first time. It was due to the fact that languages such as Latin and ancient Greek, taught by that time, became either dead or lost their popularity. Their teaching methodology, however, remained influential for another few decades (Howatt and Smith, 2014). A new teaching approach emerged, despite the fact it was very similar to that of teaching Latin and ancient Greek. The Grammar Translation Method primarily focused on translations of passages of literary texts from the target language to the mother tongue or spelling patterns corresponding between the mother tongue and the target language (Larsen-Freeman and Anderson, 2013). The method was extremely successful at developing learners' knowledge of grammar and vocabulary (Celce-Murcia, 2008), it, however, completely suppressed the development of speaking and listening skills (Richards and Rodgers, 2014).

The late 1880's brought a different, innovative way of viewing language teaching and developed new teaching methods. The classical translation methods were not considered efficient enough for a balanced and adequate language education any more, which resulted in the formation of the Direct Method (Howatt and Smith, 2014). Spoken communication was considered to be the most important to be mastered and the teaching process completely banished any kind of translations or use of mother tongue in the classrooms (Palmer, 1959). The learners were expected to start thinking in the target language as soon as possible, therefore the teachers were required to either be native speakers or have native like proficiency (Celce-Murcia, 1991).

From the 1920's scholars and scientists attempted at connecting the methods and beliefs of scientific enquiry with psychology in order to create a unified methodology for language education in general (Howatt and Smith, 2014). There were two major approaches that became the most influential. One of them was the Oral Approach (or Situational Language Learning) and the second the Audio-lingual Method of the 1940's. The Oral Approach had its roots in the Direct Method, the principles were, however more structuralist. Ability to communicate was the dominant skill to master, hence great emphasis was put on speech and structure. Systematic principles of selection, gradation and presentation of the taught material in both theory and practice were introduced for the first time (Richards and Rodgers, 2014). The teaching syllabus was designed according to specialized word lists and structural activities and language was presented in situations. The teachers moved from the oral use of sentence patterns to their complete automatic use in speech, reading and writing (Larsen-Freeman and Anderson, 2013; Richards and Rodgers, 2014). The 1940's then brought an extraordinary warlike situation, which initiated the development of the Audio-lingual Method. Personnel was required to be as fluent and accurate in foreign languages as possible, therefore their aural-oral skill was trained for specific purposes and situations (Rivers, 1981). The teaching methodology emphasized the development of listening and speaking skills instead of reading and writing, which were postponed (Celce-Murcia, 1991).

Around the 1970's, however, language education was hit by another linguistic change. The era brought new, learner centered

approaches for the first time in the history of foreign language education. Similarly, for the first time the notion of competences as keys to successful language learning was introduced (Howatt and Smith, 2014). This resulted in a revolution in language teaching, which caused the evolution of a new approach - Communicative Language Teaching, where the ability to communicate has become the first and foremost goal of the teaching process. Meaning and language use instead of understanding structure and form has started to be emphasized. Teachers have used multiple kinds of activities and groupings of learners to initiate the successful acquisition of language. Learners have become the centre of the teaching process. Most importantly, the approach has developed all four communicative skills simultaneously and equally (Celce-Murcia, 1991).

The modern, communicative period has brought a new perspective on language teaching, which initiated the appearance of numerous approaches and methods. Task Based Learning, Multiple Intelligences, or Competence Based Learning are all different variations appearing in the communicative period and they all emphasize the development of a communicatively competent language user, who is able to understand and use the language in real life (Richards and Rodgers, 2014).

2.2 What Is Communicative Competence?

There have been several viewpoints on what communicative competence means over the time of its existence. Its evolution started with Chomsky (1957, 1965), who believed that the key to successful language acquisition lies in mastering generative grammar. He understood language knowledge as consisting of linguistic competence (the theoretical knowledge a language user possesses) and linguistic performance (the ability to use that knowledge in practice). He believed that by mastering the rules of structure and grammar one becomes a skilled user of language (in both production and reception). Moreover, he claimed that any social factors were outside the importance of learning a language. Hymes (1967, 1972) as opposed to Chomsky, considered social setting and factors as an important part of foreign language learning. He introduced the need of considering more than just perfect knowledge of structure and grammar for a successful language acquisition. He emphasized the importance of using appropriate language, i.e. the use of proper language in various communicative settings and situations.

Canale and Swain (1980) then perceived the importance of communicative competence from a pedagogical (methodological) point of view. They dealt with the complexity of communicative competence and defined it as consisting of three main competences - grammatical competence (linguistic competence as depicted above), sociolinguistic competence (use of language depending on situation and setting) and strategic competence (communicative strategies for compensation for problems or deficits in language learning). Canale in his later study introduced the need of adding discourse competence to the whole. He defined it as the ability to "combine grammatical forms and meanings to achieve a unified spoken or written text in different genres. [...] Unity of a text is achieved through cohesion in form and coherence in meaning" (Canale, 1983, p.9).

Unlike Hymes or Canale and Swain, Savignon (1972) put much greater emphasis on the practical use of communicative competence and brought a study of developing it into practice. Her study revealed that the phenomenon is rather dynamic than static, rather interpersonal than intrapersonal and more relative than absolute. Therefore, it is needed to be considered as an ability to function in real communicative settings with dynamic exchange. She suggested referring to communicative competence rather as language ability. Bachman's model of communicative competence comprised of six components building up a hierarchy of competences, which he referred to as language competence. Organizational competence and pragmatic competence stood for the main competences. Organizational competence was further divided to grammatical competence (vocabulary, morphology, syntax and phonology) and textual competence (cohesion and rhetoric organization). Pragmatic

competence was understood as illocutionary competence (with ideational, manipulative, heuristic and imaginative function) and sociolinguistic competence (including different dialects, register, nature, cultural references and figures of speech) (Bachman, 1990).

Bachman and Palmer (1996) went further with changing the terms, and instead of language competence they started referring to communicative competence as language ability. The language ability was divided to language knowledge with organizational and pragmatic competence (and the further hierarchic division of competences as mentioned by Bachman's 1990 model above) and strategic competence.

Celce-Murcia however kept the term competence and suggested to include actional competence within the competences. They defined it as "the ability to comprehend and produce all significant speech acts and speech act sets" (Celce-Murcia, 1991, p. 42). That resulted in communicative competence being understood as linguistic competence, sociolinguistic competence, discourse competence, strategic competence and actional competence. Celce-Murcia (2008) in her later study then proposed a change in the understanding of the whole phenomenon and replaced actional competence with formulaic competence and interactional competence. As she explained, formulaic competence should be understood as all the fixed expressions, collocations, idioms and lexical frames a language has. Interactional competence should be understood as the formerly discussed actional competence, conversational competence (as the ability to take turns and perform well in conversations) and non-verbal competence (kinesics, proxemics, haptic behaviour and nonlinguistic utterances). However many components do the scholars propose to be taken into consideration when defining communicative competence, all the components bear equal importance and refer to knowledge and skill in using a language in interaction in real life situations (Richards and Schmidt, 2014).

2.3 Communicative Competence at Primary Level of Education in Slovakia

The institutionalized education of English in Slovakia is regulated by the National Curriculum, which defines the central objectives of education and provides guidelines and principles for developing the knowledge of learners on multiple levels. English language at the primary level is defined by the program ISCED 1, which provides basic principles on successful language teaching with the aim of fulfilling the requirement to reach proficiency level A1 (ŠPÚ, 2011). The National Curriculum is designed in accordance with the internationally accepted Common European Framework of Reference for Languages (CEFR). The CEFR (Council of Europe, 2001, p. 1) serves as a foundation for language education throughout the EU and provides "... a common basis for the elaboration of language syllabuses, curriculum guidelines, examinations, textbooks, etc. across Europe. It describes in a comprehensive way what language learners have to learn to do in order to use a language for communication and what knowledge and skills they have to develop so as to be able to act effectively." As the CEFR is a general document encompassing all the existing proficiency levels, it is written in a very general way not defining all the objectives of all the proficiency levels to detail. The Breakthrough Manuscript therefore needs to be also taken into consideration. The manuscript is an extension document designed for the purposes of the CEFR and discusses all the aspects of successful English learning at the given level A1 (Trim, 2001). The following table depicts how the three reference documents define communicative competence at the primary level of education.

Competence	Item
Lexical	1. <i>Single word forms, fixed expressions</i>
Grammatical	2. <i>Sentence production</i>
	3. <i>Phrases</i> (verb phrases, noun phrases, adjectival phrases, adverbial phrases)
Phonological and orthoepic	4. <i>Word forms</i> (noun forms, pronominal forms, adjectival forms, verb forms, word formation)
	5. <i>Sounds, stress, intonation, strong and weak forms, pronunciation</i>
Orthographic	6. <i>Spelling, punctuation, spacing</i>
Sociolinguistic	7. <i>Greetings, introduction, address forms, expletives</i>
	8. <i>Use of please/thank you/sorry</i>
Functional	9. <i>Imparting and seeking information:</i> Identifying, reporting (describing and narrating, correcting, asking, answering questions)
	10. <i>Expressing attitudes</i> (Agreement, knowledge, modality, certainty, obligation, permission, volitional, emotional, moral)
	11. <i>Suasion</i> (Suggesting, inviting, advising, offering, requesting, warning)
	12. <i>Socializing</i> (Introducing, addressing, greeting, responding, taking leave, congratulating, proposing a toast)
	13. <i>Structuring discourse</i> (Opening and closing a conversation, enumerating, hesitating, correcting oneself, summing up, using the telephone, opening and closing letter or e-mail)
	14. <i>Communication repair</i>
Discourse	15. <i>Production of coherent sentences</i>
	16. <i>Turn taking</i>

Tab. 1 – Communicative Competence at level A1

The table reveals that there are eight individual competences that learners need to master at the level A1. They are required to master all the items within the competences in order to reach a level of proficiency defined by the reference documents (ŠPU, 2011; Council of Europe, 2001; Trim, 2001). The English textbooks should include all these for a comprehensive development of the Communicative Competence at the given level and provide enough practice for the learners to master the target language as much as possible. These are used as the codes for document analysis.

3 Research Methodology

In order to investigate the development of communicative competence in the real teaching environment, a qualitative study was done. The foremost aim was to find out how different textbooks of English develop communicative competence at the primary level of education in Slovakia. Naturally, our secondary aims were to compare the results collected from the textbooks with the recommendations from the reference documents, and lastly, to discover whether there are any major differences between the textbooks and the ways they address the issue. Therefore, three research questions were stated:

1. How do the textbooks of English address the development of communicative competence?
2. Which competences are developed the most and which are neglected?
3. Which of the textbooks develops communicative competence most complexly?

For the inquiry three English textbooks were selected. The sampling was purposive. Two of the textbooks were published by international publisher and were designed for the wide public. The third textbook was published by Slovak publisher and was designed for the specific needs of Slovak learners. The textbooks were the international *Family and Friends 2*, *Our Discovery Island* and Slovak *Cool English School*.

Content analysis was done to investigate the issue. Coding was applied, where codes were selected according to the individual competences and their components (see table 1). Seven categories were found with sixteen codes all together. The textbooks were analysed and the results were then evaluated.

4 Results

4.1. Textbook 1 – Family and Friends 2

The analysis of the textbook revealed that all the categories of the communicative competence were present. The frequency of the occurrences and the richness of the practice devoted to the individual codes was, however, very different for each of the categories. Out of the total 16, 15 codes were found. Some of the codes were addressed multiple times and some of them once only. Table 2 shows the overview of results with individual categories and codes.

Category	Code	Addressed in the textbook	Activities for practice
Lexical competence	1. Single word forms, fixed expressions	Yes	Yes
	2. Sentence production	Yes	Yes
Grammatical competence	3. Phrases	Yes	Yes
	4. Word forms	Yes	Yes
Phonological and orthoepic competence	5. Sounds, stress, intonation, strong and weak forms, pronunciation	Partly	Partly
Orthographic competence	6. Spelling, punctuation and spacing	Yes	Yes
Sociolinguistic competence	7. Greetings, introduction, address forms	Partly	No
	8. Use of please, thank you, sorry	Yes	No
Functional competence	9. Imparting and seeking information	Yes	Yes
	10. Expressing attitudes	Yes	Yes
	11. Suasion	Partly	No
	12. Socializing	Partly	No
	13. Structuring discourse	Partly	No
Discourse competence	14. Communication repair	No	No
	15. Production of coherent sentences	Yes	Yes
	16. Turn taking	Yes	Yes

Tab. 2 - Communicative Competence in Family and Friends 2

The textbook itself promotes learning of vocabulary as one of the key skills. Thus lexical competence was found to be addressed multiple times. There were numerous occurrences of *code 1* addressed throughout the whole length of the textbook. Every unit started with several new vocabulary items to be learned. New lexis was presented by multisensory input, which included listening to the new word or expression, visualising it by a picture accompanied with a written form and repeating it after the recorded version aloud. Further practice of the vocabulary was done by various activities, which promoted the development all the four communicative skills.

Grammatical competence was evaluated by three codes, which were all addressed by the textbook multiple times. New grammar items were presented to the learners inductively by a multisensory input. First contact with the new structures came through a picture story promoting listening, reading and visualization by pictures. The structures were then presented by a focused grammar presentation accompanied by pictures for better understanding. Lastly, the grammar was practiced in numerous activities. Sentence production (*code 2*) was addressed several times by various topics and activities with writing exercises dominating this code. Exercises were based on producing sentences on new or rehearsed grammatical structures or on newly acquired vocabulary. Some reading (match two parts to form a sentence) and speaking activities (say sentences based on pictures), however, were also present. For *code 3* (phrases), there were multiple verb, noun and adjective phrases found to be presented and practiced. Exercises as circling correct forms, reading with comprehension or true/false were designed

for reading. Answering questions or gap filling activities were devoted to the development of writing and we found one speaking activity for naming things according to a picture. For *code 4* (word forms), similarly as the previous ones, the occurrences in the textbook were multiple. There were different variations of verbs found in the textbook, including positive and negative statements, singular and plural forms, short forms and tenses (simple and progressive present and simple past). We also found a sufficient number of pronominal forms, articles and adjectives. Noun forms for singular and plural were also included. The practice of word forms included reading and writing exercises. Multiple odd one out, underline/circle correct form and choose the correct form were addressed by reading. Gap filling and completing sentences were addressed by developing writing.

The textbook promotes teaching phonics as one of the main goals. Its aim was to present the relationship of letters and combinations of letters with the sounds they produced; therefore, it aimed at improving learners' reading skills and helping them in acquiring pronunciation and spelling patterns as quickly as possible. These involved the blended development of three competences – phonological competence, orthographic competence (in the terms of spelling) and orthoepic competence. The second category – phonological and orthoepic competence (*code 5*) was addressed in the textbook only in the terms of sounds and pronunciation. Sentence stress, intonation, even strong and weak forms were not included in any of the investigated exercises. Sounds were presented by various letters and letter clusters to introduce how unique and different English pronunciation and spelling are. The identification of sounds was incorporated into numerous listening and reading exercises. Listening included songs and chants. Reading exercises included choosing correct sounds, drills, circling correct words according to given sounds, dealing with short and long vowel forms, matching and joining exercises. The textbook addressed pronunciation by teaching various words with different sounds. We found exercises for developing listening (songs) and reading (odd one out, read words aloud). Speaking was developed by exercises for naming vocabulary items that rhymed to some other ones. Spelling, punctuation and spacing (*code 6*) was partly included in teaching phonics, especially in the terms of correct spelling. Exercises like filling missing letters to form words or messages and finding words from mixed letters were addressed by the development of reading skills. Other occurrences, like capital letters, question marks, full stops and commas, were also present and were developed by both reading and writing.

Sociolinguistic competence was defined by two codes. *Code 7* represented greetings, introductions and address forms. There were very few occurrences found in the textbook. The exercises addressed by these were designed to develop the skill of reading only - matching sentences and reading with comprehension. Due to the fact that for developing sociolinguistic competence it is very important that learners have practice not only by reception but by production as well [2], the number and types of occurrences addressed in the textbook are found insufficient for a proper development of the competence.

The situation with using thank you, please and sorry (*code 8*) was very similar. Even though there were quite many occurrences of the expressions found in many contexts, there was no explanation given on when and how to use them in real life. Also, the exercises they were included in were only reading with comprehension and dramatization of a text, which is just passive use without real understanding.

Pragmatic competences were measured by two categories – functional competence and discourse competence. Knowing the fact that functional competence applies for productive skills only (in real communication), the textbook was analysed with regards to speaking and writing only. *Code 9* (impacting and seeking information) was found multiple times, especially in the terms of asking and answering. Practice was done by making dialogues and answering questions (based on a text or a listening). For

expressing attitudes (*code 10*), the textbook addressed emotions (liking, expressing emotional states and enquiring about emotional states) and modality (expressing ability and inability). Production was induced by acting out conversations and making dialogues. Suasion (*code 11*) was found in the terms of making suggestions only. The book offered acting out after a listening and reading activity as the only way of developing this aspect of functional language competence. *Code 12* (socializing) was addressed a few times by greetings, introductions and reacting to being introduced in reading activities. We found one exercise for practicing socializing in the terms of introducing friends. Due to the low number of occurrences, we find this code to be represented insufficiently. Also insufficient attention was paid to structuring discourse (*code 13*). The only one occurrence that it was represented by was the same introduce a friend activity, where opening a conversation could be practiced. Lastly, communication repair (*code 14*) was not addressed in the textbook at all.

In discourse competence, *code 15* (production of coherent sentences) was recorded numerous times. Topics as school and afterschool activities, likes/dislikes or past classes were included into numerous exercises developing writing skills. We found multiple "write about..." tasks, which were all structured in advance so that guidance was given and learners knew how they were required to structure their writing. Production of coherent sentences by speaking was found in "describe the picture" exercises. Turn taking (*code 16*) was found in the textbook in every unit. There were speaking exercises found with given structures that asked the learners to ask and answer questions according to the topic they were working with.

4.2 Textbook 2 - Our Discovery Island

The textbook promotes the development of four communicative skills as very important for successful language acquisition, which has also been confirmed by the content analysis we have done. When looking at the textbook from the viewpoint of the competences, it was found out that that all the 8 categories of competences were addressed by the textbook. However, their presence and the amount in which they developed the individual components of the competences, was very diverse. Table 3 below shows the outline of the Communicative Competence with individual codes.

Category	Code	Addressed in the textbook	Activities for practice
Lexical competence	1.Single word forms, fixed expressions	Yes	Yes
	2.Sentence production	Yes	Yes
Grammatical competence	3.Phrases	Yes	Yes
	4.Word forms	Yes	Yes
Phonological and orthoepic competence	5.Sounds, stress, intonation, strong and weak forms, pronunciation	Partly	Partly
Orthographic competence	6.Spelling, punctuation and spacing	Partly	Partly
Sociolinguistic competence	7.Greetings, introduction, address forms	Yes	No
	8.Use of please, thank you, sorry	Partly	No
Functional competence	9.Imparting and seeking information	Yes	Yes
	10.Expressing attitudes	Partly	Partly
	11.Suasion	Partly	No
	12.Socializing	No	No
	13.Structuring discourse	No	No
Discourse competence	14.Communication repair	No	No
	15.Production of coherent sentences	Yes	Yes
	16.Turn taking	Yes	Yes

Tab. 3 - Communicative Competence in Our Discovery Island

Lexical competence (*code 1*) was addressed multiple times. Every unit included new vocabulary items with multisensory input, which were practiced throughout the whole length of unit. After the initial listening with visual presentation and repeating

the new lexis, vocabulary was practiced by a variety of exercises. There were multiple reading activities that included the new vocabulary in reading with comprehension, matching words to pictures, circling words, exercises as one out or word search. The textbook also addressed listening by various songs and chants and listening for specific words. Games included speaking activities – a card game and a guessing game designed for pair work. Writing exercises included replacing pictures for words, crosswords, defining items in the pictures and creating word maps.

Grammatical competence was addressed by all three representative codes. New grammatical structures were firstly presented in a listening activity – chant. Then the structures were presented in a focused information table. Afterwards, multiple skill promoting activities were used for proper understanding and production. *Code 2* (sentence production) included several topics, which developed the two productive skills equally. The textbook offered various activities for completing sentences, putting words to correct order and writing sentences according to different criteria. Speaking was addressed by card and board games designed for pair work. There were multiple exercises found for *code 3* – phrases. The textbook addressed adjective, noun and verb phrases. Multiple matching activities were found (match text to pictures, match questions to answers), reading activities (read a text, listen and read) and exercises for circling correct forms. Writing activities were addressed by gap filling and writing sentences according to pictures or text. For word forms (*code 4*) there were several verb, noun and pronominal forms addressed in the textbook. Reading exercises included circling correct forms and reading with comprehension accompanied with reading aloud. Writing was included into gap filling exercises and writing correct forms of answers. The code was also found to develop speaking skills by making dialogues with the use of specific forms.

Phonological and orthoepic competence (*code 5*) was present only in the terms of sounds and pronunciation. Sentence stress, intonation and strong/weak forms were not addressed in any of the exercises. The textbook offered consonant and vowel sounds (/s/ /z/, /ə/, /i:/, /l/, /t/, /n/, /hæ/, /hʌ/, /ɜ:/, /ɔ:/) to be practiced by tongue-twisters in every unit. They were intended to be listened to and read aloud. Additional exercises for practising sounds included circling given sounds or letters in words. Pronunciation of new vocabulary was practiced in exercises developed for listening and repeating (including listening to single words and expressions, songs and chants). Various words and groups of words were then practiced by tongue-twisters (including listening and reading aloud).

Orthographic competence (*code 6*) was addressed only by activities promoting spelling of words. It included exercises completing words with suitable letters according to listening, putting letters to correct order or filling vowels to form words.

Socio-linguistic competence was defined by two codes. For *code 7* (greetings, introductions and address forms), we found few examples for all the representative entries. They were addressed in reading activities only, which provided just a passive presentation of the expressions without any possibility of practical use. There was one activity for writing an e-mail, where greetings and/or introductions could possibly be used and one 'write a mother's day card' exercise, which however lacked any structural guidelines how they should look like. Therefore it is uncertain whether any of the four representatives of *code 7* would be practiced at all. For the use of please, thank you and sorry (*code 8*) there was one occurrence found only. At the very end of the textbook, we found one example of thank you in a song about mother's day. There was one more example in the activity book, which was however only promoted as a part of the background design for a mother's day card. According to the received data we find the development of the socio-linguistic competence insufficient and completely unsatisfactory.

Functional competence was identified by 6 codes, out of which 4 were addressed in the textbook. Imparting and seeking

information (*code 9*) was defined by asking, answering, identifying and reporting. There were multiple exercises designed for speaking. The textbook provided possibilities for post-reading discussions, answering questions based on listening, various types of pair work and reporting information to the rest of the class. For *code 10*, from the recommended list of attitudes 2 were addressed by the textbook – emotional and volitional. We found three kinds of exercises for the development of expressing attitudes: making a dialogue, giving narration about a topic to the classmates and a card game designed for working in pairs. Suasion (*code 11*) was addressed by requesting assistance (Help!) in one occurrence in one reading exercise. We decided to include it into the occurrences, as the learners were requested to act the dialogue out. Nevertheless, the lack of examples and practical use of the occurrences is found insufficient for the development of this part of functional competence. Structuring discourse (*code 13*) was addressed by opening and closing e-mail, enumerating and hesitating expressions. The occurrences were included into exercises with acting out conversations and one with writing an e-mail. Communication repair (*code 14*) and Socializing (*code 12*) were not addressed in any of the exercises.

In Discourse competence, we found *code 15* (production of coherent sentences) multiple times in every single unit. There were numerous topics that were addressed by various writing and speaking activities. Writing was included in both structured and unstructured activities. Unstructured activities requested the pupils to find and write new or interesting information about various topics, whereas the structured activities included schemes on how the writing itself should look like. Speaking was developed by numerous activities, such as describing pictures, describing various topics, giving information (likes, dislikes, objects, animals, feelings, desires, etc.) either to individuals, in pair work or in a group. Turn-taking (*code 16*) was present in several activities including pair and group work. Exercises for making a dialogue, making discussions and doing a class survey on various topics with the use of different expressions for turn taking were found.

4.3 Textbook 3 – Cool English School

This textbook turned out with the best results out of the three analysed ones. Almost all of the codes were addressed sufficiently with a great variety of practice devoted to the development of the components of Communicative Competence. Table 4 shows an outline of how the competences and their components were addressed in the textbook.

Category	Code	Addressed in the textbook	Activities for practice
Lexical competence	1.Single word forms, fixed expressions	Yes	Yes
	2.Sentence production	Yes	Yes
	3.Phrases	Yes	Yes
	4.Word forms	Yes	Yes
Phonological and orthoepic competence	5.Sounds, stress, intonation, strong and weak forms, pronunciation	Yes	Yes
Orthographic competence	6.Spelling, punctuation and spacing	Partly	Partly
Sociolinguistic competence	7.Greetings, introduction, address forms	Yes	Yes
	8.Use of please, thank you, sorry	Yes	Yes
Functional competence	9.Imparting and seeking information	Yes	Yes
	10.Expressing attitudes	Yes	Yes
	11.Suasion	Yes	Yes
	12.Socializing	Yes	Yes
	13.Structuring discourse	Yes	Yes
Discourse competence	14.Communication repair	No	No
	15.Production of coherent sentences	Yes	Yes
	16.Turn taking	Yes	Yes

Tab. 4 - Communicative Competence by Cool English School

One of the main aims of the textbook was teaching vocabulary. The development of lexical competence (*code 1*) was addressed numerous times. Every unit in the textbook started with the presentation of new vocabulary items (words or expressions) by a multisensory input. Pupils listened to the new lexis, read the written forms and looked at their visualisations by pictures. Afterwards, they were requested to repeat the heard items. The freshly acquired vocabulary accompanied the whole unit in various kinds of exercises multiple times. There were multiple activities developing reading skills, such as word search, matching activities, odd one out activities, circle correct forms or replacing pictures in text with their equivalent. Listening activities, except the initial listen and repeat, were included in listening for specific information – matching pictures or playing bingo and listening to songs. Speaking activities included naming objects in various contexts. Writing was developed by naming items according to various criteria or filling gaps.

In the second competence, grammatical competence, all three corresponding codes were addressed numerous times. New grammatical structures were presented inductively by a picture story. It included listening to a story accompanied by written form of the text with pictures for better understanding. The new structures were then presented in a focused grammar presentation accompanied by pictures and audio recording. Subsequently, various activities were included to practice and produce these structures. Sentence production (*code 2*) included several topics with new or already acquired vocabulary and grammatical structures. There were multiple writing and speaking exercises for developing the competence. Completing sentences, writing or saying sentences based on pictures, putting words to correct order, identifying mistakes, or matching two parts of sentences to form a meaningful whole were present multiple times. Activities as identifying mistakes, finding differences and board games were also addressed to promote the development of sentence production. Involved communicative skills were reading, writing and speaking. Phrases (*code 3*) were also addressed multiple times. Adverbial phrases, noun phrases and verb phrases were present in various exercises. There were numerous activities addressed by receptive skills – matching sentences, choosing correct forms, or reading with dramatization. For listening, there were activities, such as listening to songs, repeating heard information or choosing correct answers. Practice by productive skills was also included. There were numerous exercises aimed at gap filling, completing structures or describing (pictures, for example). Word forms (*code 4*) were present in the terms of verb forms, noun forms, pronominal forms and adjectives forms in various exercises. Their development was found in listening activities (chants, repeating activities, dramatization), reading activities (circling correct forms or replacing picture with correct word in a reading aloud exercise). Moreover, we found multiple speaking activities for describing pictures, making sentences with correct forms or board games.

The next competence, phonological and orthoepic competence (*code 5*), was addressed in the terms of vowel and consonant sounds (see tab.3), sentence stress, intonation, rhythm and pronunciation. There were various activities that promoted the correct use and pronunciation of sounds in words, with specific attention paid to the peculiarities of English language in contrast with Slovak (animal sounds). For correct sentence stress, intonation and rhythm there were several specially developed chants and tongue-twisters for practicing both listening and reading aloud. Pronunciation of words was promoted by multiple activities.

Code 6 (spelling, punctuation and spacing) was present in the terms of correct spelling only. Activities like filling words with suitable letters, putting words to correct order and doing crosswords were found multiple times.

Sociolinguistic competence, defined by greetings, introduction and address forms (*code 7*) was addressed in the textbook multiple times. Not only did all the three components of the code appear in multiple kinds of exercises, there also was an exercise

designed for explaining the differences between greetings in Slovak and English language. Listening with practice and dramatization included listening activities. Reading aloud, reading with comprehension and matching activities were included in reading exercises and writing dialogues and completing sentences and dialogues with suitable words and expressions were designed for practicing writing skills. The second component of sociolinguistic competence, *code 8* (use of please, thank you and sorry) was also addressed many times. We found these expressions in various listening activities (listen and read, listen and practice the conversation). Reading activities included reading with comprehension or choosing correct conversations for specific purposes. Productive skills were included in producing dialogues and acting them out according to given structures. Sorry, in addition to that, was separately analysed in an individual focus presentation in contrast to 'excuse me' with explanations about what situations to use them in.

Pragmatic competences were defined by two categories – functional competence and discourse competence. Analysing functional competence, we focused on practical use of the given codes in real situation-like exercises either by speaking or writing. For *code 9* (imparting and seeking information) we found examples for asking, answering, reporting and identifying. Exercises like dramatization of a text, various games and dialogues on various topics were found to develop the competence to a great deal. Expressing attitudes (*code 10*) was addressed by expressing certainty, modality, permission, emotional, moral and volitional attitude. The ability of expressing attitudes was incorporated into exercises for dramatization, dialogue making and simulations. The next code, *code 11*, was addressed in the terms of offering assistance, accepting offers and requesting. These were included in exercises for practicing social interactions in different places (as shops or restaurants). The development of this competence was, similarly to the previous one, practiced by simulations, creating dialogues and dramatizations. Socializing (*code 12*) was present in the terms of practicing greetings, introducing, taking leave and congratulating. Dramatizations of texts and conversations were addressed multiple times. Other examples were board games, which promoted practicing how to respond to greetings and responding to being introduced. Structuring discourse (*code 13*) was addressed by opening and closing in a conversation and an invitation card. Activities for the practice included practicing dialogues, writing dialogues and writing an invitation. *Code 14* (communication repair) was not addressed in the textbook.

The very last discourse competence comprised of two codes, which both were addressed by the textbook multiple times. Production of coherent sentences (*code 15*) was addressed by various topics and grammatical structures. Writing activities included tasks with given structures serving as guidelines for the pupils. For speaking, we found activities describing pictures, retelling stories or giving specific information on given topics. Turn taking (*code 16*) was found to be developed by numerous speaking and writing tasks. There were both pair and group activities for practicing expressions for taking turns in conversations. Activities such as role-plays, simulations, creating and acting out dialogues, describing topics in pairs, or playing board games were addressed as a great opportunity for practice.

5 Findings and Conclusion

Communicative Competence is a complex phenomenon. The results of the analyses show how diverse the possibilities for its development are. By the content analysis of the three chosen textbooks we found out that not only did the presence of the competences vary in the textbooks, the interpretation of their importance was also very different.

First of all, it must be stated that developing lexical and grammatical competence was found equally important for all the three textbooks. There were numerous occurrences and there

were multiple exercises for the practice of all the items of these competences in all the textbooks. For the phonological competence, the two international textbooks (Family and Friends 2 and Our Discovery Island) emphasized the importance of sound and pronunciation, and excluded intonation, stress, rhythm and strong and weak forms. These were, however included in the Slovak textbook, Cool English School, which presented various exercises for its practice. On the other hand, orthographic competence was best developed by Family and Friends 2, which addressed all the three items - spelling, punctuation and spacing equally. The other two textbooks focused on spelling exercises only. The sociolinguistic competence lacked the most representation in both of the international textbooks. Only Cool English School offered a variety of occurrences with enough opportunities for developing the competence complexly. Functional competence was also addressed in a diverse way. The best results were again reached by Cool English School, which addressed four out of five items of functional competence sufficiently with enough practice. Communication repair was a single code that was not found in any of the examined textbooks. The results of the discourse competence were, however, very pleasing. All the three textbooks addressed both of the codes in a variety of exercises, which revealed that using language in discourse for creating coherent sentences and taking turns is one of the most important aspects of successful language acquisition.

To conclude and answer the previously stated research questions, it was found out that communicative competence in its complexity is addressed in the textbooks very differently. Within the communicative competence, all the seven competences have various presence in the textbooks. Three competences dominate the development of communicative competence: lexical competence, grammatical competence and discourse competence. Sociolinguistic competence and functional competence are the two lacking both enough presence and practice. The textbook that develops communicative competence in the most complex way is the Slovak Cool English School, which provides adequate number of occurrences and practice for 14 out of the 16 codes.

Assuming that pupils follow exactly what the textbooks offer and get no additional opportunities to practice the target language from their teachers, there is a risk that some of the textbooks prepare them insufficiently for certain aspects of language use. To support that, Richards and Schmidt (2014), Celce Murcia (1991) and Canale and Swain (1980) all agree that for a complex development of communicative competence all its components are needed to be developed at the same rate. It must be added, however, that the results gained from the analyses are descriptive only. There is no possibility for them to be generalized, as the outcomes are rather of a qualitative nature than of quantitative. Moreover, in order to find out how the communicative competence is developed in real classrooms, a deeper study would be needed to be carried out. Observations of the lessons and interviews with teachers and/or pupils would serve with a more realistic view on how the competence is developed in real conditions. Provided that further study is done in the field, valuable results may be achieved. The development of communicative competence at the primary level in Slovakia may be explored to a greater deal, and, not to mention that the whole foreign language education process may be improved in quality.

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Primary Paper Section: A

Secondary Paper Section: AI

PRICE ELASTICITY OF DEMAND FOR ACCOMMODATION SERVICES – EMPIRICAL APPLICATION IN PRAGUE

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Abstract: The paper focuses on the issue of measuring price elasticity of demand. Research has available a significant data sample on a daily basis in the segment of accommodation services since 2005 in the Czech Republic. The aim of the paper is to evaluate the development of consumer behaviour (measured by price elasticity) in the monitored segment from 2005 to the year 2017. For the calculation of price elasticity log-log regression analysis is used. The data is available daily, and therefore the resulting elasticity in the article is compared to several levels (working days, weekdays, summer months). One of the primary outputs in the research is that price elasticity is relatively stable in the monitored levels over time but has changed significantly over the long-term period.

Keywords: Price Elasticity, Demand, Price Optimization, Consumer Behavior.

1 Introduction

The presented paper focuses on the issue of measuring the price elasticity of demand in the accommodation services market in Prague. The motivation to resolve this issue is mainly the need to know the price elasticity as a critical input element at price optimization. Given that in the sector of services, price with work is generally an essential element, and it is also important to know the price elasticity. The log-log regression analysis resolved using OLS model has been chosen as the critical method for measuring the elasticity. This method is more accurate and versatile than the traditional measuring of the price elasticity at a point using the derivation of the demand function. In particular, the objective of this contribution is to measure the price elasticity of demand for accommodation services in Prague in different periods and different years, and based upon this to point out the differences that arose in the consumer's behaviour between 2005 and 2017. The paper presents a literature review, where studies related to the issue are commented, and then the methodology and also the work with analyzed data. Due to the focus of the contribution, this chapter is significant. There are also described the starting points for further research; primarily there are defined the investigated periods (the price elasticity of demand is measured yearly, on the weekend, during summer months and working days). Based on the described methodology, the research itself is then carried out, the key findings of which are presented in the next section entitled results. The results are described not only in the individual monitored periods, but there is also made comparison over time - therefore, the comparison is also presented graphically. Due to the uniqueness of the outputs, there is presented the discussion on the presented results and summarizing conclusion.

2 Literature Review

Literature review focus on the issue of measuring the elasticity in general first, and consequently on the application of this issue in economic reality and on its importance for market analysis and the functioning of the business. The issue of measuring the elasticity is generally described in several sources (e.g. Mankiw, 2011), generally understood as measuring of the percentage change of one variable (usually quantity) in a percentage change of another variable (usually price). The term elasticity concerning demand was defined by A. Marshall, a representative of the Cambridge Economic School (Marshall, 1997). Generally described approach on measuring of the elasticity is used, for example, by Kirschen et al. (2000); Kanjilal & Ghosh (2017), but it is used in the energy sector. In another concept (which is also used in the presented contribution), the elasticity is calculated using statistical tools, usually using regression analysis. This approach is used, for example, by Houthakker and Magee (1969, pp. 111-125) – but this approach is used here using data obtained through 224 enterprises and consumer behaviour monitoring. In the presented paper, elasticity is

calculated on the basis of daily data directly from the market, which makes it significantly different. A study focusing specifically on a single city in the tourism sector and the price elasticity of such demand is laborious to find. The closest one is an article focusing on the whole of South Korea (see Ahn et al., 2018, pp. 768-778).

The presented paper uses the log-log regression model to measure the price elasticity. Regression analysis is used quite often in the issue of tourism in relation to the price, in particular, to find out the effect of one quantity on another. We can also find similar application related to one specific event (see Barreda et al., 2017) or product (see Andreyeva et al., 2010; Colchero et al., 2015). The question is the importance of measuring the price elasticity of demand in the given sector. Tourism (or service sector) is a sector in which proper pricing plays a significant role. Compared to industry (where businesses often optimize costs), the service sector is different because the business has to work much more with the price and understand how its demand works - and for this purpose is created this contribution. The price and knowledge of its elasticity is then the input element for a revenue management tool, respectively, for revenue and yield management. The importance of price elasticity is described by Vives et al. (2018); Melis & Piga (2017) or Hung et al. (2010). The price elasticity of demand is one of the most important input factors in the optimization process focused on price. We can use some other approaches to predict the price for accommodation (see e. g. Tang et al., 2016) with the public data. That approach is commonly used by the firms in the hotel industry but is not directly related to the consumer behaviour in a particular time – such the approach via price elasticity method. Consumer behaviour is related to the different situation on the market, and therefore there is some trade-off for price optimization. Situations like that are described e. g. by Boz et al. (2017) or Smeral (2018). Based on the previous text, this paper measure price elasticity of demand that can be used for several different analysis or price optimization process in the company.

3 Research Methodology

Measuring the price elasticity is generally an issue that has several possible ways to be resolved from a methodological point of view. In addition to traditional measurement using the midpoint method or the elasticity of the measurement at point using a partial derivative, it is possible to use the methods using regression analysis. The midpoint method is too general for measurement and is not appropriate for use with a large volume of data. Measurement of elasticity at a point is, on the other hand, much more accurate, but inappropriate for general determination of price elasticity. For these reasons, it is more appropriate to use the method using regression analysis. A simple log-log regression analysis method will be used to determine the coefficient of price elasticity of demand. In this logic, theoretical regression function is defined as:

$$\log Q_i = \beta_0 + \beta_1 * \log P_i + \varepsilon_i \quad (1)$$

where Q_i is the quantity demanded, P_i is the corresponding average price of the quantity demanded i . Values β_0 and β_1 are parameters of the theoretical regression function and ε is a random error. Thus, the demand function will be expressed as a function of quantity. We will estimate this theoretical regression function in order to obtain an empirical regression function:

$$\log Q_i = b_0 + b_1 * \log P_i + e_i, \quad (2)$$

where the estimate of parameter β_1 , i.e. b_1 is the slope of the estimated regression empirical function, i.e. the coefficient of price elasticity of demand. For the solution, the OLS method will be used, and it can be mentioned that there is a B function

$$B = \sum_{i=1}^n (\log Q_i - b_0 - b_1 * \log P_i)^2, \quad (3)$$

whose solution is under conditions (4)

$$\sum_{i=1}^n e_i^2 = \sum_{i=1}^n (\log Q_i - b_0 - b_1 \log P_i)^2 \text{ K min} , \quad (4)$$

which corresponds to the following solution:

$$\frac{\partial B}{\partial b_0} = 2 \sum_{i=1}^n (\log Q_i - b_0 - b_1 * \log P_i) * (-1) = 0, \quad (5)$$

$$\frac{\partial B}{\partial b_1} = 2 \sum_{i=1}^n (\log Q_i - b_0 - b_1 * \log P_i) * (-x_i) = 0 \quad (6)$$

For measured parameters b_0 and b_1 apply (7) and (8)

$$b_1 = \frac{1}{n-1} \frac{\sum_{i=1}^n (\log P_i - \overline{\log P}) * (\log Q_i - \overline{\log Q})}{\sum_{i=1}^n (\log P_i - \overline{\log P})^2} \quad (7)$$

$$b_0 = \overline{\log Q} - b_1 \overline{\log P}. \quad (8)$$

Although the objective is not to estimate the entire regression function only its coefficient b_1 ; complex outputs will be presented, especially for the purpose of evaluating the whole model. Its evaluation will be done using the coefficient of determination r^2 .

There are available data between 2005 and 2017. These data contain data on the quantity demanded, quantity offered, and average price in the segment of accommodation services in Prague. Only traditional accommodation facilities (so-called collective accommodation facilities), i.e. data out of the so-called sharing economy, are included in these data. The uniqueness of this data lies in the fact that data is available on a daily basis. This data was obtained and adjusted in cooperation with STR Global Inc. This paper works with more than 4500 values. However, in order to measure the price elasticity using the method described above (log-log regression analysis), it would be first necessary to adjust the data obtained in such a way as to be appropriate for the analysis. It is essential to realize the fact that the data (especially the average price) reflects the decision-making of the companies in the current market situation. If we want to measure the price elasticity of demand, we need to work with such data that is not affected by the extremes at that moment (such as data at the end of the calendar year or major events that are organized at that moment). There are two ways to make this adjustment.

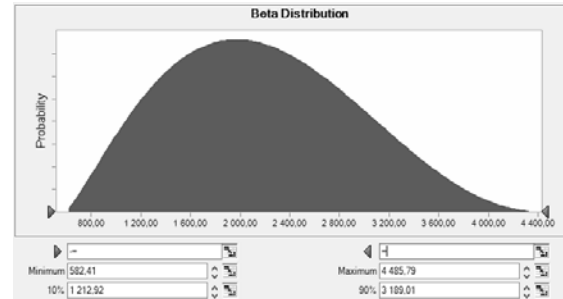
One option is to remove extremes from the mentioned values, for example, using the Grubbs' test. These statistical elements are particularly useful when we do not know more detailed information about the statistical set (we know only its division). Due to the fact that we know the analyzed market, this data will be adjusted under a different logic. Data adjustment is based on the assumption that, in extremely high or extremely low added value (profitability) of services sold to traditional collective accommodation, decision-making on price is influenced by a number of other factors than only the quantity demanded. It is the same decision-making logic of enterprise that is described in the enterprise's behaviour in duopoly or cartel (for more information see Kaplow, 2013; Escobar & Llanes, 2018). At first, it is necessary to find an index that evaluates the profitability of the service sold on the market. For these purposes, based on the obtained values was calculated the *RevPAR* (Revenue per Available Room) index for each day, which was defined as (9)

$$\text{RevPAR} = \text{Occ} * \text{ADR}, \quad (9)$$

where *Occ* is the average daily occupancy, and the *ADR* is the average daily rate. In order to make a final adjustment to the above-mentioned extreme values, it is useful to know the exact distribution function of the variable (in our case, *RevPAR*). In

order to accurately estimate the progress of this distribution function, an extension to MS Excel software was used, namely CrystalBall from Oracle. In this software was used the function, allowing to estimate the best distribution of random variables. For every single year, beta distribution (modified to indexed numbers) has always been recommended. An example of such a distribution in 2005 is presented in Figure 1.

Figure 1. Beta distribution of RevPAR in the year 2005



Source: own calculations

In order to eliminate high and low values, only such *RevPAR* values were chosen that are higher than 10% percentile and less than 90% percentile. The adjustments described above are carried out for each year and consequently are used only those data that achieve the *RevPAR* values between specified percentiles. These values better reflect the real market situation and are more appropriate to achieve the objective of the contribution. A similar procedure as the one described above was also applied to occupancy - but there was no link between occupancy and price, which may distort output data. However, it should be noted that the outputs (i.e. adjusted data) were very similar. Such adjusted data can already be used to determine the coefficient of the price elasticity of demand for different periods. These periods can be set up very individually. For the purposes of this contribution, the price elasticity of demand for each year was measured under four different periods. Firstly, there was a measurement of the price elasticity throughout the whole year (YE_{pd}). Secondly, there was a measurement of the price elasticity throughout the weekend (WE_{pd}). The reason was to find out differences in consumer's behaviour during these days. It is necessary to be aware of the fact that within the accommodation services, it is not possible to define the weekend traditionally, since the price for which the service is sold, is related to the price for a night from one day to another. That is why the price and demand carried out on Friday or Saturday are considered as the weekend. Thirdly, price elasticity was measured throughout working days (OE_{pd}). Fourth, price elasticity was measured throughout the summer months (July and August, SE_{pd}). The reason was to find out whether partial differences in consumer's behaviour could be observed during summer months, which traditionally represent a unique situation in terms of demand for accommodation services. All of the elasticity described above was measured over the years 2005 to 2017 and then was carried out a comparison.

Based on the research conducted, there were found out the following strengths and weaknesses of the methodology described above. The versatility of a given method, which can be applied to the whole market as well as to partial market players, must be considered a strength. However, it is necessary to work with appropriate data, and at the same time, it is necessary to have sufficient amount of this data, which can be considered as a weakness of the given method. At the same time, it is necessary to draw attention to the fact that there was used a regression function that is linear in parameters and may not be applied to demand (or supply) that do not show a linear relation. However, this contribution were found relatively high determination coefficients in each year, indicating that the selected regression function is appropriate for resolving the problem.

4 Results

Based on the method described above, the following regression functions were made for all years. Only regression features for yearly price elasticity of demand (YE_{pd}) are presented for the monitored years. Simultaneously are added determination coefficients, which represent the evaluation of given regression model. This output is shown in Table 1.

Tab. 1. Regression functions and coefficients of determination

Year	Regression function	r^2
2005	$\log Q = 5.616719102 - 0.362903643 * \log P + e$	0.86
2006	$\log Q = 5.58355147 - 0.354651246 * \log P + e$	0.82
2007	$\log Q = 5.791506919 - 0.415405081 * \log P + e$	0.93
2008	$\log Q = 6.102048541 - 0.53260554 * \log P + e$	0.89
2009	$\log Q = 6.955174752 - 0.813366093 * \log P + e$	0.84
2010	$\log Q = 6.094051824 - 0.542514621 * \log P + e$	0.91
2011	$\log Q = 6.118644965 - 0.537013766 * \log P + e$	0.79
2012	$\log Q = 5.588298508 - 0.36789955 * \log P + e$	0.93
2013	$\log Q = 6.147395448 - 0.534920875 * \log P + e$	0.87
2014	$\log Q = 5.586308141 - 0.357170905 * \log P + e$	0.86
2015	$\log Q = 5.132899811 - 0.204763496 * \log P + e$	0.87
2016	$\log Q = 4.831771571 - 0.111720684 * \log P + e$	0.91
2017	$\log Q = 4.82509913 - 0.103602176 * \log P + e$	0.89

Source: own calculations

The thirteen regression functions mentioned above represent only the necessary procedure to determine the yearly price elasticity of demand (YE_{pd}) in individual years. Regression functions were also estimated for the remaining three periods in which elasticity was monitored. Furthermore, the total output of all measured price elasticity of demand in individual years is presented in the article, as shown in Table 2.

Tab. 2. Price elasticities of demand

Year	YE_{pd}	WE_{pd}	OE_{pd}	SE_{pd}
2005	-0.363	-0.312	-0.356	-0.248
2006	-0.355	-0.128	-0.432	-0.402
2007	-0.415	-0.362	-0.437	-0.459
2008	-0.533	-0.341	-0.597	-0.375
2009	-0.813	-0.717	-0.825	-0.807
2010	-0.543	-0.470	-0.546	-0.577
2011	-0.537	-0.281	-0.546	-0.222
2012	-0.368	-0.286	-0.378	-0.324
2013	-0.535	-0.361	-0.556	0.150
2014	-0.357	-0.174	-0.330	0.476
2015	-0.205	-0.064	-0.258	0.788
2016	-0.112	-0.020	-0.151	0.482
2017	-0.104	0.223	-0.192	0.330

Source: own calculations

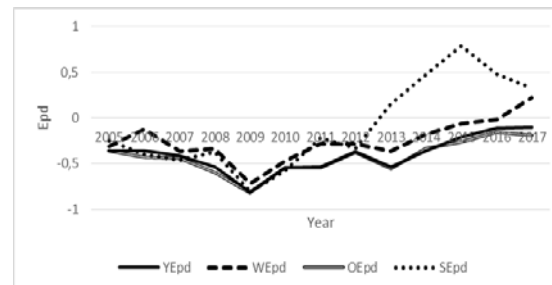
First of all, it should be noted that the price elasticity of demand is traditionally negative (reflecting the negative relationship between price and quantity demanded), although sometimes the outputs of the price elasticity of demand are presented in absolute value, this presentation does not make sense, because we omit the situation where demand itself can take on something other than a traditional relationship. Several key conclusions result from the above-mentioned values and regression functions. First, it is necessary to point out the fact that yearly elasticity indexes YE_{pd} are always in the interval $\langle -1, 0 \rangle$ and it can be judged that the demand for accommodation services in Prague in the monitored years is price inelastic; thus, the change in the price of 1% (e.g. increase) results in a lower than one-percent change (decrease) in quantity demanded. It should be noted that these are the total average values that cannot yet be used to optimize the price, but they only give a general overview of the behaviour of consumers buying accommodation services

in Prague. On the one hand, the inelasticity of demand for price services is related to the location. Prague is a key destination for tourism, which encourages lower elasticity values. The average price elasticity of demand in Prague between 2005 and 2017 is -0.4031.

If we focus on the values of the price elasticity during the weekends, it is obvious that this value is lower in absolute value each year (although the numerical value is higher, the higher elasticity in the negative values reflects the lower elasticity; hence the interpretation is made different) than the total yearly elasticity. Consumers are less sensitive to the change in price during the weekends, and they will buy a given service even at higher prices. The WE_{pd} values are also on average in the absolute value lower by 0.1498 points. However, it is necessary to draw attention to the value of the index in 2017, which reach positive values. This fact will be commented on further.

The situation during working days (OE_{pd} index) corresponds very closely to the overall yearly elasticity, but in some years, it shows values that correspond to a higher sensitivity of the consumer to the change in price. This is not surprising and only corresponds to what has already been described above. The last index focuses on elasticity values during the summer months (July, August) in the monitored years. Until 2012, the values do not show excessive deviations from the average elasticities in the industry, but consequently, the value of the coefficient begins to grow significantly and reaches positive values (similar to the WE_{pd} value in 2017). Based on the methodology used, these positive values mean that the basic relationship between the quantity demanded and the price is disrupted, and in the short term, there is a Giffen's good. In the previous text, the individual elastic values were described separately; subsequently we will focus more on their development over time. In order to better orient ourselves in development, the given values are presented graphically. The output can be seen in Figure 2.

Figure 2. Development of price elasticities between 2005 and 2017



Source: own calculations

As shown in Figure 2, the index of yearly price elasticity of demand (YE_{pd}) has an inconsistent trend over time. This is the first decreasing and subsequently increasing tendency of the curve with a breakthrough in 2009. By this year, it can be stated that the elasticity index has become more negative (thus constantly decreasing), reflecting the fact that consumers were becoming more sensitive to the change in price. The highest values (in absolute value) of the index was 0.813, bringing closer to the unit elasticity of demand. The question is what caused this breakthrough. One of the possible explanations may be the financial crisis in 2008, which also affected the tourism market. Since this year, on the other hand, we monitor the growth of the given curve and its approach to zero values, reflecting the fact that in recent years, the consumers are less sensitive to the change in the price of accommodation services in Prague. The other curves are commented in the previous text or show no significant deviations.

5 Conclusion

This paper presents the measurement of the price elasticity of demand in the area of providing accommodation services in

Prague. It is unique by its focus, and a similar study on the price elasticity of given demand in one city is difficult to find. The outputs presented in this contribution point out to inelastic demand in terms of price. This output corresponds to a study focusing on South Korea, where the elasticity in individual years is not mentioned, or their deeper investigation is not carried out. In some articles, we find the measurement of other types of elasticity (for example, a number of studies focusing on macroeconomic theory measure the income elasticity). In general, the above-mentioned research is not only unique but also actual and can serve not only for a deeper understanding of consumer's behaviour but also as a methodical material that presents the possibility of measuring the price elasticity in a given location (due to its endless potential of use). The statistical analysis that was carried out may have shortcomings in the form of use of regression analysis based on functions that are linear in their parameters. At the same time, only a simple regression analysis was used, and thus no further impacts were investigated - but this would make it unclear to determine the price elasticity. The presented outputs can be used both in terms of consumer's behaviour analysis and in terms of the enterprise's possible optimization of price management, respectively yield and revenue management in the accommodation facility. Knowledge of price elasticity of demand is crucial for this optimization.

Knowledge of price elasticity of demand is an important area not only needed to understand consumer's behaviour but also to manage the enterprise effectively. The price elasticity index reflects a number of variables that need to be taken into account when deciding on pricing and other business planning. Similarly, it is an indicator that clearly describes the consumer's behaviour in terms of market performance in the change in price. This paper presents two key outputs. The first is the application of log-log regression analysis to market data so that we can determine the value of price elasticity of demand. From a methodological point of view, this is a universal use that can be applied (under conditions described) to any industry. The second key output is an overview of price elasticity of demand for accommodation services in Prague between 2005 and 2017. Price elasticity was measured under four different criteria (price elasticity of demand for the year, working days, weekends and summer months). The measured outputs were then compared over time. Several conclusions can be drawn from the above calculations. Firstly, it is obvious that the demand for accommodation services is price-inelastic - its value has long been on average at -0.4031. The inelasticity of demand in this segment reflects the fact that the percentage change in the quantity demanded that was triggered by a one-percent change in price is lower, and that is on the value of price elasticity. Another conclusion resulting from the research is interesting in terms of time development. Price elasticity of demand is not constant and has seen significant differences since 2005. Until 2009, the values of price elasticity in absolute value were increasing and then again returned to zero. This development can be attributed to the financial crisis that occurred in 2008. The last key conclusion from the research is related to the effect of Giffen's good, which is manifested mainly in recent years in monitoring the values of elasticity during the summer months. This is only a basic overview of the outputs, but the contribution provides possibilities for further investigation of the issue.

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CULTURALLY RESPONSIVE TEACHING OF ADULT ROMA IN SECOND CHANCE EDUCATION

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The present paper is an outcome of the VEGA project 1/0084/17: The concept of education of adult Roma from marginalized communities financed by resources from the Ministry of Education, Science, Research and Sport of the Slovak Republic.

Abstract: The study focuses on second chance education of adult Roma with lower secondary education and outlines possibilities of applying culturally responsive teaching of adults, based on an analysis of relevant theoretical background and qualitative research. Margery B. Ginsberg and Raymond J. Wlodkowski's concept of culturally responsive teaching is used as the main theoretical grounding.

Keywords: second chance education, adult Roma, culturally responsive teaching, guidance.

1 Introduction

The aim of the project "The concept of education of adult Roma from marginalized communities" was to create a concept of educating adult Roma from marginalized communities, based on relevant theoretical background and qualitative research. The authors based the present paper on the concept of individualisation in the education of adult Roma from marginalized communities (Pirohová, Lukáč and Lukáčová 2016), created within the scholarly discourse of Brian Fay's (2012) multicultural approach to philosophy of social sciences, Pierre Bourdieu's (1997) theory of cultural capital, andragogical theory of critical reflection, emancipatory and critical transformation teaching of adults (Brookfield 1996, 2005; Freire 2000; Mezirow 2000) and the results of ethnographic and other scholarly studies aimed at research into the Roma ethnic group (cf. Pirohová, Lukáč and Lukáčová 2016).

Individualisation of the education of adult Roma from marginalized communities is an education strategy and approach of one's adaption to the specifics of the target group in the period of education with the aim of social inclusion by means of meeting specific educational goals, defined with the assistance of the members of the target group (Pirohová, Lukáč and Lukáčová 2019, p. 6).

When analysing the range of vocabulary and the use of language in adult Roma people who are bearers of the poverty culture, initiatory education was recommended (Pirohová, Lukáč and Lukáčová 2018). Basil Bernstein's (2005) theory of language codes was used as the theoretical grounding. With regard to the level of cultural capital and restricted use of the language code, the main aim of initiatory education of adult Roma is to enhance their readiness to learn thanks to understanding the benefits of education and broadening their vocabulary (Pirohová, Lukáč and Lukáčová 2019, p. 165). In its focus, initiatory education is a type of socio-cultural education, preparing adult learners who lack education and those who only completed lower secondary education for further and, primarily, second chance education.

2 Culturally responsive teaching of adult Roma in second chance education

In comparison to the non-Roma population in Slovakia, the education of Roma from marginalized communities is at both a qualitatively and quantitatively lower level. One of the reasons, as well as consequences, of this situation is the fact that education, in the excluded Roma community, does not represent a factor of social stratification. The linear education system is determined by the cultural framework of the dominant culture. It is based on mutual compatibility of successful preparation for a profession in the school system, which is a precondition for finding a job.

At present, it is also impossible for the adult education system to create space to compensate for the handicaps in schooling of those who, for various (in the case of marginalized Roma, these are predominantly socio-cultural and structural) reasons, did not manage to succeed in the early stages of their preparation for a profession, even though school legislation provides the necessary scope (*Act No. 245/2008 on Education, Act No. 131/2002 on Universities*). Not only does the system of further education of adults offer an alternative for the uneducated and unemployed, but it also deepens the existing disparities among adults by highlighting the qualification differences between the educated and uneducated.

Second chance education is considered inevitable for adequate social functioning, fulfilling social roles attributed (from the gender as well as historical viewpoint) to adult age, regardless one's ethnicity or social stratification status, especially in adults with little or no education and a low level of basic skills. At the same time, the above premise suggests society (the state) is responsible for creating conditions for all its members to succeed and acquire education in order to enhance their potential and take part in the development of society.

In spite of the constitutional right to education and the legal obligation of schooling, a large group of Roma people from marginalized communities are not receiving education of the same quality and the conditions for their entering the school environment are not the same. The school system pushes out numerous groups of Roma children and the education system of adults is not (organisationally and ideologically) ready to compensate for these shortcomings. Individuals are more or less able to fulfil the visions of the social system, depending on a great number of factors. An important role is played by primary socialisation, where cultural transmission takes place and structural conditions, as well as relationship frameworks, occur in the bounds of cooperation versus conflict among majority society and marginalized Roma communities. That is why it is necessary to perceive the education of adult Roma, similarly to other areas where majority and minority cultural patterns meet, in academic analysis, as a means of inclusion, as well as a means of ideologisation (depriving one of their own cultural uniqueness), as "individuals cannot be studied without a consideration of the multiple ecological systems in which they operate" (Brooks, Gunn et al. 1993, p. 354).

Ainsworth (2013) characterises second chance education as a way to achieve a higher level of education in a neoliberal atmosphere based on individual responsibility. By that, he alludes to the motivation and responsibility of every person, with regard to self-development, who is, ideally, expected to participate in the professional preparation and self-motivated education of adults. Second chance education is also labelled as 'second chance schools', or 'second way education'. However, the motivation and responsibility of an adult towards self-development is also connected to whether these have been sufficiently supported within the family, community and at school. From this follows whether secondary education is adequate and stimulating for such adults who are bearers of a different culture to the dominant one (such as middle class culture, majority nationality, ethnicity).

2.1 The concept of culturally responsive teaching in second chance education

Raymond J. Wlodkowski and Margery B. Ginsberg, the authors of the concept of culturally responsive teaching, have been researching and publishing on the relationship between culture, teaching and motivating adults for a long time. The target group of their research into education is heterogeneous. Primarily, it consists of adult (part-time) students of high schools and universities in the USA of various nationalities, ethnicities and with varied political views. A substantial number of these students come from families and communities where the

experience of success at school is limited, similarly to the majority of adults from marginalized Roma communities in Slovakia. Ginsberg and Wlodkowski's concept of culturally responsive teaching originated as a reaction to the problem of members of low income groups and certain ethnic groups leaving school early and achieving much lower academic results.

Based on an analysis of procedural and structural components of the system and the organisation of education at universities, Ginsberg and Wlodkowski (2009) found out that this system and the organisation of education is, to a significant extent, a model strengthening external motivation. During their studies, the students experience techniques and procedures of teaching, testing, assessment and classification that are competitive in nature. They are based on the assumption that people try to learn and achieve results if they are rewarded for their behaviour. "Strongly supportive of this network of incentives is the implied value that individual accomplishment merits academic and social rewards" (Ginsberg, Wlodkowski 2009, p. 25). Ginsberg and Wlodkowski (2009) follow research results that confirm that, in educational activities that are explicitly focused on the outcomes for a reward, the learners look for a less demanding and more superficial ways to achieve the set educational goals (Brophy 2004) and external goals stimulating teaching bring about a more conceptually superficial and less permanent understanding that occurs when learners are encouraged to learn by means of autonomous goals of education (Vansteensiste, Lens and Deci 2006).

Second chance (part-time) students at high schools and universities, who come from low income families and ethnically marginalized communities are, in this system and organisation of schooling, mostly unsuccessful, as the expectations and values of the dominant culture function as ultimate judges and the main decision makers on the reward system for learning and also, unfortunately, what 'labels to stick' on those who find learning hard and/or learn in a specific way (Merriam and Associates 2007). Thus, Ginsberg and Wlodkowski (2009, 2017) emphasise the importance of understanding the relationship between internal motivation, learning, and culture.

When creating the concept of culturally responsive teaching, Wlodkowski and Ginsberg applied a multidisciplinary approach and used findings and results of research into neuroscience, anthropology, theory of communication, critical theory, multicultural studies, theory of teaching adults, linguistics, psychology, and sociology. Among the theoretical sources in the concept of culturally responsive teaching are:

- The symbolic and interpretative theory of culture (Geertz 1973);
- A critical theory of adult learning (Brookfield 1996, 2005);
- The theory of multiple intelligences (Gardner 2006);
- Experiential learning (Kolb 1984);
- Emancipatory approach to transformative learning (Freire 2000).

According to Geertz (1973, p. 89), culture is a system of passed-on ideas expressed in symbolic forms of meanings by which people communicate, preserve and expand the cognition of views on life. An analysis of culture is not an experimental science that looks for rules, but an interpretive science, or science looking for and understanding meanings (Geertz 1973, pp. 5-29).

Teachers, similarly to students, have opinions and values regarding education and the student's and teacher's roles. These are then transferred on by means of history, faith, media, family, mythology, and political affiliation. The ways in which one experiences educational situations are interceded by cultural influences. Such situations are not culturally neutral. In this way, education "represents a distinct set of cultural norms and values that for many of today's learners are at best culturally unfamiliar and at worst a contradiction of the norms and values of their gender or their racial and ethnic backgrounds" (Ginsberg, Wlodkowski 2009, p. 10).

With regard to the tradition of cohabitation and experience with the Roma ethnic group, it can be presumed that lecturers of further education and teachers in second chance education in Slovakia, similarly to the Czech Republic, are bearers of the Gypsy/Roma cultural scheme. According to Doubek, Levínska and Bittnerová (2015), the meaning of the models of cognitive schemes changes in the historic context, the term *Gypsy* can designate such concepts as 'a dangerous element and a bane of the countryside', 'working class at a lower level of evolution', 'defective population', or 'amoral and inadaptible', while *Roma* can stand for a scheme created in the ethno-emancipation movement, which does not follow the Gypsy tradition, or a member of a national minority and a partner of the majority, the victim of the majority, a hamstrung, or abused, citizen. "Three schemes of Gypsy/Roma are given by the metaphors one associates with the words Gypsy/Gypsies or Roma" (Doubek, Levínská and Bittnerová 2015, p. 113) and are "cognitive structures through which people interpret their experience of the world and, even though the basis of cultural schemes is idiosyncratic, the schemes as such are not fixed on an individual (Doubek, Levínská and Bittnerová 2015, p. 42). The cultural schemes 'Gypsy/Roma' often mask the social inequality and individuality of persons and could obstruct culturally responsive teaching, especially if the lecturers in second chance education are not aware of their influence.

As a precondition for the development of the ability to teach in a culturally responsive way, Ginsberg and Wlodkowski (2009) believe teachers should be aware of the various meanings of the term 'diversity' and they should find out to what extent they identify themselves with the values of the dominant culture and whether and if so, to what extent, they are able to appreciate the values of alternative cultures. The authors of this concept follow the ideas of Brookfield (1996, 2005), who points out the importance of the cultural perspective in the education of adults, as "the differences of class, culture, ethnicity, personality, cognitive style, learning patterns, life experiences, and gender among adults are far more significant than the fact that they are not children or adolescents" (1996, p. 379).

Ginsberg and Wlodkowski (2009, 2017) emphasise the importance of experience and experiences in the education of adults and the potential of Kolb's (1984) experiential learning, also in second chance education, the determination of learning styles by the students' culture (Gardner 2006), as well as the importance of awareness of the learners' 'praxis' within various cultures and social backgrounds (Freire 1970).

According to Ginsberg and Wlodkowski (2009, p. 24) "culturally responsive teaching occurs when there is respect for the backgrounds and circumstances of students regardless of individual status and power, and when there is a design for learning that embraces the range of needs, interests, and orientations in a classroom".

Establishing inclusion, developing attitude, enhancing meaning, and engendering competence are conditions for internal motivation in learners of various cultures. Ginsberg and Wlodkowski (2009, 2017) defined the principles, norms and behaviours and recommend methods of cooperative teaching and collaborative learning, peer-teaching, and focus groups for evaluation of education. The principles, norms and methods are means for the development of conditions for learners' internal motivation.

Education and educational activities are contextualised in the learners' experience and observations; the goals of education are achievable regarding the learners' current way of thinking and their behaviour. "The entire academic process of learning, from content selection to accomplishment and assessment of competencies, encourages learners to make choices based on their experiences, values, needs, and strengths" (Ginsberg, Wlodkowski 2009, p. 44).

Culturally responsive teaching requires the educator of adults to possess expertise, empathy, enthusiasm, clarity, and cultural

responsiveness. These are the pillars of culturally responsive teaching. "Our most advantageous approach as instructors is to see these pillars as skills and not as abstractions or personality traits. They can be learned, and they can be improved on through practice and effort" (Wlodkowski, Ginsberg 2017, p. 48). The above skills of an educator in culturally responsive teaching are inseparable; a low level in one of the fundamental skills can lower the overall competence of the educator teaching in a culturally diverse educational environment.

2.2 Guidance in the education of adult Roma with no or lower secondary education

There is more unknown than there is known about teaching adult Roma from marginalized communities. The basic legislative framework of second chance education is known and so is the dense network of educational institutions in Slovakia. Thanks to *The Atlas of Roma Communities (Atlas rómskych komunit 2019)* and several research activities, the characteristic features of these marginalized communities are known and, partially, also their inhabitants (at least their life strategies connected to living in the culture of poverty, social and demographic features, etc.). There are enough findings available in scholarly publications (such as Rubenson, Desjardins 2009; Hyland-Russell, Groen 2011; Isaac 2011; Cross 1981; Lukáčová 2014; Dickie 2000; Magro 2006-2007, and others) on the reasons people with little or no education (basic or vocational) do not even think about increasing their level of education. There are a great number of reasons (or obstacles) of structural, situational and individual nature.

From a great number of relevant phenomena, let us mention an insufficient number of education opportunities (geographical marginalization), little or no support by the (family and/or school) environment, family history characterised by a low level of education (a low level of institutionalised cultural capital), a low level of education within the family, the influence of various life situations due to which one left school early (usually prioritising partnership and family life over education), fear of failing in education, negative earlier education experiences, internalised feelings of shame, a lack of confidence in one's abilities, and many others. Shorris (2000) aptly describes the life situation of the poor and associates poverty with limited social mobility that the poor have to face, as powers that came together against the poor and pushed them out of the public world into a kingdom of everyday fight for survival. Such an enforced way of life provides no space for considering an action plan in order to acquire a higher level of education.

In spite of the fact that the education level of the Slovak population has been increasing on a long-term basis, the numbers of early leavers from lower secondary and secondary vocational education has also grown since 2009 (*Education in your Country, Eurostat 2018*). Schools do not sufficiently respond to this trend, the accessibility of education for adults who left their initial education early is not improving. There is no tracking, head-hunting, or active recruitment of adults for second chance education. For this reason, the authors of the present paper carried out qualitative research aimed at the assessment of second chance education from the viewpoint of students of Roma nationality (Pirohová, Lukáč and Lukáčová 2019). By comparing and contrasting the research results and the theoretical resources, a concept of educating adult Roma from marginalized communities was created, bearing characteristics of culturally responsive education of adults.

The outcomes of the qualitative research (Pirohová, Lukáč and Lukáčová 2019) confirm that Savelsberg et al. (2017) were right when stating that some second chance students, especially those with characteristics of marginalized learners, require supplementary support which is demanding on resources, that exceeds the scope of what most educational institutions are able to provide. Savelsberg et al. (2017) call for more intense cooperation between those involved (schools, educational institutions (in this case, employment agencies), municipal offices, and others) with the aim of providing support by means

of a case management approach as an integral part of the success of second chance educational programmes. What the authors of the paper call for is that any of the above institutions would, in a responsible and zealous way, 'accept the order' and not only attract learners into the process of education, but also guide learners with a low or no level of education on their way to what they themselves call a 'better life'.

The authors of the paper suggested a concept of guidance in the education of adults from marginalized communities. Guidance is support and a form of intervention by people of importance prior to and during education. These people inform and motivate those adults who have no chance of finding out about possible education and/or are not supported by their family and/or community and have a low level of knowledge, skills, key competences (such as language competences or digital competences) and have no, or very limited, experience of employment or an environment outside their own Roma community.

The guidance concept within education requires cooperation at the decision-making level (mainly by the Slovak Ministry of Education, Science, Research and Sport and the Slovak Ministry of Labour, Social Affairs and Family), at the level of such institutions as the Centre of Labour, Social Affairs and Family, schools/educational institutions, and potential employers. This guidance requires the cooperation of career counsellors, education planners, as well as organisers of further education, educators of adults, community workers and the staff of employment agencies, depending on the type of adult education (second chance education or further education).

The research carried out indicates that adult Roma people with lower secondary education (even if motivated) are incapable of independent learning and studying. A proactive approach towards learning cannot be expected by this part of the adult Roma population, which is why facilitation in the teaching of adults with lower secondary education, and even less so in the teaching of adults with no education is not possible. They need and expect support in learning from the educator of adults and others who participate in the management and organisation of education, who can, at the same time, comprehend the needs and problems adults face in Roma families and communities. The authors of the paper drafted outlines of the concept of guided education of adult Roma from marginalized communities or, in other words, outlines of education of adults with no or lower secondary education, specifically 'accepting praxis', 'support of informedness and stimulation', 'dialogue' 'clarity', 'demonstrative and active nature' and 'reinforcing cognition/knowledge' and the 'experience of success' (Pirohová, Lukáč and Lukáčová 2019).

Accepting praxis of adult Roma learners is expected in those persons who design, organise and carry out the education of adult Roma in understanding the motives of behaving, acting and the way of communication among adult bearers of the culture of poverty. Understanding is fundamental in accepting the unique nature of an adult and, at the same time, in adapting the contents of education, organisation forms and methods of education, as well as diagnostic and evaluation methods designed for this target group within adult education in a way that adult Roma from marginalized communities find comprehensible and meaningful. In general, adults need to know why they are supposed to study and what benefits education can provide them with (cf. Knowles et. al 2005). Adults who think and act in the context of poverty (Payne et. al 2010) need to be given a chance to understand that there is a purpose to getting an education in adult age. They live 'here and now', without thinking about the future. In the culture of poverty, there is no place for proactivity, planning and setting goals (Payne et. al 2010, p. 59), which impedes the understanding of the added value of learning and gaining education for the future. Such ideas and expectations are neither good nor bad. They are a reflection of long-term social and cultural conditions of the life in poor, isolated communities grounded in ethnicity and poverty.

Support of informedness and stimulation requires intervention by people who organise and carry out education in the informedness and motivation of adult Roma with no, or only secondary lower, education. Such intervention is especially needed by those adults who live in detached and segregated Roma communities. In the present concept, the intervention should not lie in 'giving lectures', but rather in providing specific information regarding the possibilities of education directly connected to real-life situations and problems adult Roma experience in their communities. The aim is to explain to adult Roma how to approach such situations and solve the problems differently so it is more favourable for them and their family. Should the low level of basic competences require so, helping a client/an adult learner when filling in and acquiring the necessary forms and documentation is also considered intervention.

Dialogue is manifested by means of an equal-partnership approach on the part of those who organise and provide education to adults/educators in further education towards adult learners. Such approach disapproves of patronising lectures or rephending adults, as well as complete mutual acceptance without justified or specific criticism. One does not show respect to an adult learner/participant of education by accepting everything they say. "Respect demands that we hold others to the intellectual and moral standards we apply to ourselves and our friends" (Fay 2012, p. 239). The ability, on the part of the educator of adults/teacher in further education, to lead dialogue manifests in conversation, appropriate use of dialogical methods, providing adult learners with opportunities for self-presentation, the ability to use methods or cooperative learning, and the support of collaborative learning.

Clarity means that the content of education and its transformation must follow the existing level of knowledge, skills, experience and, at the same time, follow the level of the language competence and the way adult Roma use language, which requires a reduction in the education content to basic information and skills connected to the type and the subject matter of education. That is, "if the learning tasks are well beyond their current skills or prior knowledge, people will not be able to accomplish them, no matter how motivated they are" (Wlodkowski, Ginsberg 2017, p. 7). In methodology of education, it is necessary to strengthen the role of informal diagnostics and prepare diagnostic methods in an oral form, or innovated methods in a written form, completed by visualisation of objects, phenomena, activities, and processes.

Demonstrative and active nature is connected to the way of thinking and restricted, or missing, cognition of objects, phenomena, and procedures which adult Roma have not encountered in the community environment and, thus, are unable to name. It is necessary to complete the explanation of information and demonstration of procedures using images, models, and audio-visual recordings. The way of thinking of and the teaching style to adult Roma from marginalized communities is affected by the types of intelligence that are developed and considered as important in Roma families and communities (cf. Gardner 2006). Adult Roma work manually at home and within their community. Those who are employed or work 'under the table' also perform manual labour. In this context, adult Roma learn best in an active way and by means of activating methods, appropriate to their level of cognition.

Reinforcing cognition and the experience of success stand for reinforcing newly-acquired knowledge and skills by multiple repetitions. It is paramount that accurate understanding of presented knowledge and techniques, or a finished product, are followed by praise. Experience of success at school can be motivating for further education in those adults who have not yet experienced it. "Learners who complete a learning experience feeling positively motivated about what they have learned are more likely to have a continuing interest in and to use what they have learned" (Wlodkowski, Ginsberg 2017, p. 6).

The answer to the question which type of adult education the concept of guided education should be a priority was discovered in the findings of foreign research and the research carried out by the authors of the present paper. Adults with no or little education, moreover living in a Slovak environment stigmatised by ethnicity and poverty, have no, or a very small, chance to succeed in the job market. The above claim is also supported by the fact that a majority of marginalized Roma communities are localised in less developed regions of Central and Eastern Slovakia. At the same time, the results of the present research can be used, in which a majority of adult respondents were studying to acquire a certificate in order to find a job (Pirohová, Lukáč and Lukáčová 2019).

3 Conclusion

Second chance education of adults is a poor relation within primary and secondary schools in Slovakia. It is replaced by activities of further education or other measures taken for marginalized communities. It is important to address such issues as the availability of drinking and supply water in Roma communities, negotiating the plots and housing for Roma from marginalized communities and educating their children but, at the same time, it is equally important to provide education for those adult Roma who lack it or only acquired a low level of education.

Intervention by means of career counselling is considered a key part of the concept of guided education. What is, however, problematic is the way further education and balance counselling is carried out, which does not adapt to the specifics of the target group. Those adults who are unable to read or write, or whose basic competences are at a very low level, tend to misjudge their attributes or the ability to understand words whose meaning is unknown to them.

The authors of the paper are convinced greater support is necessary at the decision-making, management, and executive level of second chance education of adult Roma from marginalized communities in the system of primary and secondary schools. At the same time, based on the research results, it can be assumed that adult Roma who lack education are not ready to be taught in general. Some of them cannot read or write, or their reading, writing and numeracy skills are at a very low level. They live 'here and now' and they use strategies of survival in poverty.

Further vocational or retraining education, achieving, at least, secondary vocational education, is considered beneficial for (Roma as well as non-Roma) adults, as this type of further education requires a certain level of basic competences from its participants. Programmes of further retraining must, however, be primarily designed with the requirements of the job market in mind and in such an extent and quality which produce course leavers who can succeed in the job market.

It is possible to apply the concept of guided education in the programmes of social-cultural courses, community education for adult Roma from marginalized communities. Nevertheless, if educational programmes are not designed with the identified needs of the 'praxis' of adult Roma, living in communities, it might be ineffective.

The processes and activities in designing and organising the education of adult Roma from marginalized communities in the concept of guided education require the creators, organisers, and educators of adults to be trained in andragogy. The concept by Freire (1978), a teacher, is inspirational in understanding what a second chance teacher should be like. A guiding teacher is an accepted authority for adult learners thanks to his or her expertise and partnership approach who, however, does not abuse their authority and qualification to manipulate the adult participants of education who bear different cultural capital.

In the concept of culturally responsive teaching (Wlodkowski, Ginsberg 2017; Ginsberg, Wlodkowski 2017), the process and

practice of increasing the awareness of educators of adults in recognising there are other, alternative, cultures present in society, different to the dominant one, whose views of work, family, and priorities in the life of an individual can be stimulating for second chance and further education lecturers. Finding out to what degree educators of adults identify with the dominant culture should be the first step in this process, as "understanding of others is deeply interrelated with understanding ourselves" (Fay 2012, p. 229).

The authors of the present paper realise the need for further research aimed at second chance teaching of adults at primary and secondary schools from the learners' perspective, as well as from the viewpoint of the teachers actually involved in second chance education. It is impossible to apply the concept of culturally responsive teaching in the historically and culturally distinct system of second chance education in a complex way. Further research is necessary to outline the model of culturally responsive teaching of adults who lack, or only achieved a low level of, education for the social and cultural environment of Slovakia, localised in Central Europe.

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EMPLOYEES' LEAVING TO RETIREMENT FROM PERSONAL MANAGEMENT AND SELF-MANAGEMENT PERSPECTIVE

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This article is part of project solving VEGA 1/0001/18 "Preparation for ageing and old age – possibilities of andragogical intervention."

Abstract: The article deals with the process of employees' leaving to retirement and its determinants that do not often appear in practice. Retiring of employees from active work life forms a crucial part of personal management. This management represents a significant factor influencing a successful or unsuccessful adaptation of seniors to life after finishing their active working activity. However, more important in this context is the way of life people have during their whole productive working age, and not only at the time of their highest vitality, mental or psychical strength. This study focuses on these aspects in the given problematic area. At the same time, it highlights the need for examining and solving the period of the old age more comprehensively, from several scientific disciplines.

Keywords: involution, leaving to retirement, geragogy, well-being, workaholism, burn-out syndrome, personal management.

1 Introduction

Ageing and the old age belong to the essential concepts of geragogy. We can define the concept of old age as "... a certain period of the human life cycle that is related to the legal right for retirement and to the time when people notice several involution changes in their bodies and personalities." (Határ, 2014, p. 45). The traditional deficit model perceives ageing as a process of significant involution changes in the physical, psychological, social, health and working area. However, nowadays, there is preferred a newer model, the so-called developmental model of ageing. This model assumes that several processes occur during the human life, and they ultimately lead to positive consequences in the old age (Potáňová, Golecká, 2004, in: Ráczová, Klasová, 2012). Based on the results of Bonn study, Kruse and Lehrová (1989, in: Šolcová, 2011) concluded that ageing is a process of growth where appear new sources and potential skills. Some examples of favourable phenomena related to the increasing age indisputably include higher wisdom acquired with experience, practical intelligence, prudence, stability in opinions, ability to make judgements (Stuart-Hamilton, 1999, Vágnerová, 2000), as well as more effective emotional regulation (Tangney, Baumeister, Boone, 2004, in: Ráczová, Klasová, 2012). Older people often have increased persistence, mainly in monotonous activities. They are also more patient, and they can understand other people better. A characteristic feature of seniors is also their higher prudence and stability in opinions and relationships (Balogová, 2004).

To experience successful ageing, older people need to adapt to the changes related to the autumn of life. They have to accept their leaving to retirement and their income decrease. At the same time, they should create positive relationships with people and feel useful. Seniors can handle these problematic tasks only if they feel balanced, and they set real-life objectives. At the same time, they should accept themselves and have a full scale of interests. Ageing correctly is an art. We have to learn how to accept the old age and prepare for it positively (Balogová, 2004). Attitudes to ageing and old age represent a critical condition for the adaptation to ageing (Ráczová, Klasová, 2012). The lifelong optimistic attitude to life has a significant impact on active living. The recent surveys confirm that there is a direct link between the life satisfaction and the ability to have an active attitude to life. The general satisfaction of seniors is higher if they stay optimistic, and they deal with different activities and hobbies. It is essential so that they prepare for the old age, at least in an unplanned way. Several authors (Balogová, 2004, Čornaničová, 2007, Határ, 2013, Veteška, 2017 and others) think that the preparation for ageing should start much earlier than in the last years or months of productive life. We agree with the

opinion (Balogová, 2016, Ráczová, Marhevska, 2013, Veteška, 2017 and others) that preparation for ageing is an individual matter, and it should form part of the lifelong concept of individuals (Šolcová, 2011, Balogová, 2004, Čornaničová, Határ, 2014, Veteška, 2017 and others). According to Čornaničová (2007), preparation for ageing should decrease the social, psychological or biological risks of adaptation failure. At the same time, this preparation should prepare older people for the biological and psychosocial changes which are waiting for them. In this context, the preparation for ageing should run in three-time horizons. *The long-term preparation* is running all the life. It includes preparation for a healthy lifestyle as well as education to have an adequate attitude to ageing and older generation. *The tuning period* runs at the age of 40–60. The preparation for ageing uses the healthcare measures and psychological preparation as a prevention against ageing. *The short-term preparation* starts about five years before reaching the retirement age. This preparation aims to achieve the social security and safety of older people when they leave to retirement. It also focuses on the options to achieve a fluent transition in this process.

Several scientific and specialised publications in the field of geragogy, andragogy, sociology, or social work deal with the issue of creating suitable conditions for employees' leaving to retirement. Based on the study of foreign and local literature, we can judge that there exists a relatively small scientific research. There are not enough examples implementing research findings in the practice that would offer a comprehensive view at solving the given problematic issue in interaction with all the relevant scientific fields of study. It is also essential to study this topic holistically, cooperating with medical fields of study, a special education pedagogy, psychology, as well as with the age and personal management, human resources departments and others.

2 Specific features of the employees' leaving process from personal management perspective

It is indisputable that leaving to retirement represents one of the most significant social factors which influence the lives of older people. They experience the limitation in the range of their activities, they lose their previous programme, and their social contacts are smaller, as well. Seniors start focusing on their problems, and they attribute a high significance to them. This behaviour can lead to social isolation because seniors also stop being members of social groups they belonged to before (Balogová, 2004). Older people have to accept the fact that only some people from their previous contacts stay in touch with them, many people leave forever, and there are less and less people they can share their memories with (Šolcová, 2011). According to Balogová (2004), personal dissatisfaction (more frequent by men than by women) arises when seniors do not know what to do with their free time. Until very recently, work occupied a lot of their time, and after leaving to retirement, they suddenly have much time, and they can feel empty. Working 60-year-old men with a positive attitude to their retirement have more plans and a more optimistic vision of their future life than their peers who can see only negative aspects of their leaving to retirement. Seniors who make plans about their future already during their working period can adapt to retirement much faster and more easily. Here it is crucial to emphasise the importance of education, healthy lifestyle and preventive measures aimed at timely preparation for ageing. In this way, seniors get enough information, they can adequately develop their out-of-work activities and hobbies, and they prepare for their retirement.

The experience from practice show that the process of employees' leaving from active work life is frequently absent there despite being part of the central areas of personal management. Personal management deals mainly with the recruitment of new employees and their adaptation to the working environment. It focuses on the stabilisation of

employees, their education, professional growth, remuneration and evaluation in relation only to their working performance and not to the preparation for their leaving to retirement. There arises a question whether the current employers create suitable conditions for the adaptation of their employees to retirement and whether they stay in touch with their ex-employees after finishing their work contract. In many cases, these employees are people who have spent their whole productive working life just in one organisation or company. For this reason, "...the process of successive non-participation often connects with the process of gradual demotivation of employees." As mentioned in the quotation above, the leaving of employees represents one of the significant parts and activities of personal management. It requires not only a more consistent and careful application of psychological methods and knowledge but also the knowledge from other scientific disciplines when compared to their other activities. This requirement is crucial because this process of employees' leaving is not about a sudden interruption of all professional and social contacts between employees and the employer. It is instead a gentle and gradual "deactivation of employees". We would like to add that, before leaving to retirement, employees still follow and fulfil the common organisational objectives, adapting their strategies to the company strategies. For this reason, it is indispensable so that the employer's approach is correct and not causing difficult, frustrating or stressful situations or any other negative phenomena that could lead to negative psychological states, such as anxiety, the inferiority complex, or the feeling of failure. To avoid these negative phenomena, employers could make use of the following recommendations: to elaborate a timetable of employees' adaptation to the finishing of their active working life and to talk with them about their leaving. They should also inform employees about their further possible activities, whether at the same workplace or in other civic organisations and foundations. The retirement can initiate the following consequences: the loss of profession connects with the change of identity (people identifying themselves with their profession suddenly change into "retired" people, what can decrease their social status). Other consequences are: limitation or loss of their social contacts with colleagues, decreasing of their material standard, a radical change of their lifestyle and the necessity to acquire a new life standard, the need for the reorganisation of their free time with new activities. Effective adaptation to new conditions depends on several personal and social factors, such as the individual need for work, professional effectivity, social and financial needs, pre-retirement work conditions, the real situation and plans related to the own retirement or partner's retirement. The social policy of the given organisation represents a significant factor in this process. It derives from the set of rules valid in State politics in the care about employees. This area of employer's activity deals with bespeaking of employees' needs which are not related only to their working performance or results. This obligatory (legal) care about employees consists of the creation and maintenance of suitable conditions for them during all periods of their working life, including the last period as well.

3 Chosen personal determinants in the employees' leaving process

It could seem that a smooth leaving of employees to retirement depends only on the quality of their leaving process. However, this process reflects the way of life employees have much earlier than at the end of their working career. Ageing is running through all human life from birth to death. In this context, we can talk about the preferences in current values. Many people think that the cause of the crisis in spiritual values is in the preference of satisfying material needs and the importance of financial profit. This life attitude often leads to the ignoring of the Work-Life Balance during the productive life. This phenomenon is related to workaholism and burn-out syndrome.

Employees with workaholic tendencies who reach the retirement age require a specific approach. "Workaholism is considered to be a professional deformation or illness with a common addiction to work." (Capponi, 1997, p. 58). The topic of

workaholism appeared in Slovakia as well, mainly in the last ten years. People often perceive workaholism as a destructive "lifestyle". (Nešpor, 1999). Essentially, workaholism is an exaggerated maladaptive effort to be accepted and praised by others and to acquire control by excessive working activity. Paradoxically, this hyper-compensation leads to their alienation from others. They often lose their control of the situation at work as well. They deal with so many issues that they are not able to handle them anymore. In their mind, these people with workaholic tendencies are motivated with ideas such as "Be strong, reliable, perfect and fast! Work hard!". They often have the following attitudes to work and other people: "If people do not work hard, they are lazy", "People judge others by their success and performance", "I have to use every moment in a useful way" or "The best work is the work I do myself". For people who want to change their workaholic tendencies we recommend, for example, the cognitive-behavioural therapy. This therapy primarily aims at changing more deep-rooted attitudes that push people to hyper-compensation. Another useful strategy is the training of assertive abilities such as refusing excessive requirements of others or requests for doing a favour, applying delegation of tasks, and accepting of own mistakes. Workaholism is frequent by personalities with anankastic features, with the need for perfection, control and success. It more often arises by men than by women. Mainly people with higher education can have these workaholic tendencies (Pešek, Praško, 2016). Occupations that require power, decision making and manipulating are riskier for workaholics because they include higher work tension and constant working. If employees with workaholic tendencies do not have their usual workload, they are anxious about the given situation (Nešpor, 1999). Let us imagine how these workaholics will cope with their leaving to retirement. How should the leaving process of employees with workaholic tendencies run? Who should the employer cooperate with to achieve a smooth ceasing of their participation? Our article wants to focus on these and many other questions as well.

The result of low workload can be the bore-out syndrome. On the other side, the result of excessive and longterm stressful work and the imbalance between the personal and private life can be the burn-out syndrome. In this context, Pešek and Praško (2016) say that people who are not able to notice their physical feelings have tendencies to work excessively. This attitude can quickly lead to the burn-out syndrome or other psychosomatic difficulties which alert people that they should slow down. A negative consequence of workaholism can be a significant limitation or distortion of important interpersonal relationships, activities and interests. In this way, these people gradually start feeling the burn-out syndrome. Freudenberg (1974), was the first one who defined the burn-out syndrome. He describes the life of a prospective architect who has many ambitious ideas, expectations and illusions about life. However, in his practice, the architect meets with unexpected and meaningless problems. He fights against them, but he gradually loses his enthusiasm. Finally, being completely frustrated and demotivated with the absurd life of the current society, he leaves his job and escapes to the African jungle. After the definition of this concept, there were elaborated many scientific studies about people with symptoms mentioned above. Currently, this concept has more meanings. Several authors think that burn-out syndrome is an expression of emotional exhaustion, depersonalisation and decreased personal performance. People who work with other people and they deal with their needs often experience this syndrome. Other authors add other statements to this definition. "It is a formally defined and subjectively experienced state of physical, emotional and mental exhaustion caused by longterm dealing with situations that are emotionally hard. A combination of two factors has the most frequent impact on these emotional requirements: high expectations and chronic situational stress." (Manoukian, 2009, p. 14 - 15). The following statement also specifies this concept. "The burn-out syndrome reflects the evident emotional and cognitive deterioration, exhaustion and tiredness connected with emotional distance and indifference to work problems and a sharp decrease of working performance." (Kalwas, 2007, p. 119). Summarising the definitions mentioned above, we can say that burn-out syndrome represents a loss of

professional and personal interest. This condition is a result of a process where people are very intensively involved in specific tasks to such a level that they lose their enthusiasm and motivation. The burn-out syndrome is the reaction to the situations that provoke excessive stress. It is a state of physical, emotional and psychological exhaustion often connected with the feeling of own failure, meaningless effort, lack of necessary energy and increasing depressions. Its beginning can have several reasons. They are related mainly to the working performance, the ability to cope with stressful situations and solve problems. Moreover, personal character also plays an essential role in burn-out syndrome. The external environment does not have to have a significant impact on personal reasons for employees. Employees with low self-confidence, low tolerance of workload and low resistance to stressful situations represent a group at highest risk. They do not have clarified their personal life goals, and they are not able to communicate with other people adequately. However, also "strong" individuals can experience burn-out syndrome in certain situations. These are mainly such employees who think that they do not need any relax, and they can handle everything without the need of other people (Stock, 2010). For this reason, it is crucial for everybody to pay adequate attention to the prevention and to plan regular joyful activities. If people have a full work timetable, it seems quite impossible to introduce these activities in it. However, not having enough free time can result in their gradual exhaustion, dissatisfaction or illness (Praško et al. 2006).

4 Possible aspects of self-management

From the facts mentioned above, it is evident that people who have kept a balance between their working and personal life during their productive period should not have a fundamental problem with their adaptation to retirement. To have a satisfying lifestyle, working people should try to achieve a reasonable balance between their working and personal life. (Bedrnová, et al., 2009). This attitude is the so-called work-life balance (W-L B). This concept appeared already in the '70s of the last century, and it dealt with the need for higher balance between working and family life. The issue of W-L B is a conflict because of the time spent at work to the detriment of time employees should dedicate to themselves within the time off work (Pisoňová, 2012). This time should consist of the time for relax and the time for family and friends. Pešek and Praško (2016) emphasise the emotional significance of work when the job and work stop being only the tools for financial security. More and more people seek a meaning of life and fulfilment of their emotional needs at work. They want to "belong somewhere", "be accepted" and "be useful and praised". Many people who live alone or in dysfunctional relationships perceive the organisation they work for and their colleagues and clients as the second /substitutional or, in some cases, as the only one family they have. As a result, there arise many problems because relationships at work cannot substitute family, and they cannot fully satisfy the unfulfilled emotional needs from childhood. Despite this fact, it is necessary to develop and cultivate relationships with colleagues at work. Work and all the working environment can be the source of satisfaction, joy, fulfilment as well as emotional stress. When being in stress, people are in the "doing mode" (see Picture 1). Incessant thinking about problems, planning and acting represent the typical features of this psychological attitude.

Picture 1: Psychological modes - Comparison of Being and Doing modes (Lyddy, Good, 2016)

DOING MODE (Mindfulness)	PROPERTY	BEING MODE (Goal-Directed Cognition)
Present	Temporal Focus	Past and future
Non-conceptual	Perception	Conceptual
Direct experience	Locus of reality	Narratives
Acceptance	Judgement	Evaluation
Self-quieted	Self	Self-centred
Goalless	Goals	Goal-directed
Intentional	Agency	Automatic

Segal, Williams, Teasdale (2002) describe the mind which we can imagine as a system consisting of several components

influencing each other mutually. Between these components, there is an incessant flow of information. They create specific variable patterns which correspond to the needs of the organism and react to the impulses from the environment. One pattern of mental activity is dominant during one period. Subsequently, another pattern substitutes the previous one. We can imagine it as a car going through the city. The transmission gear changes according to the immediate needs. We can compare the given transmission gear speed to a specific psychological mode. Every transmission gear speed has its function, and it is suitable for a specific traffic situation. Similarly, all psychological modes has their function. Changes of psychological modes occur automatically, but we can also change them consciously. As in the transmission gear speed, the human mind cannot operate in two modes at the same time. The activity of one mode hinders the activity of other modes.

As we can see in Picture 1, the mind is in the "doing mode" when it finds out that there exist some discrepancies between how the matters occur or look like and how they should be. This finding provokes a specific negative emotion and mental, physical activity to reduce or remove this discrepancy. This process is running without problems if people know what is necessary to do. However, in some situations, when it is not clear what to do, or when it is not possible to do it, there persists the feeling of dissatisfaction. The attention focuses on the given discrepancy. The human mind permanently deals with possible options of how to remove this discrepancy. In this way, people focus on their future and past. They get only partially aware of their current situation. In general, this process of mental problem solving helps them. For this reason, people almost incessantly go to this mode fully automatically, without realising it. However, in some situations which cannot be easily solved, this mode can lead this activity to a vicious circle and worsen the given situation. The "being mode" represents an alternative to the "doing mode". The "being mode" is a direct and immediate experiencing of the present moment. Our attention focuses on the present moment and accepts the actual situation without trying to evaluate or change it. If we do not have to compare the current state and the desired state, we can fully concentrate on the present moment and experience it fully and deeply. We do not deal with the past nor with the future. We focus only on the presence and its flowing in every moment. In this way, our attitude to our thoughts and emotions changes, and they are perceived similarly as sounds or other expressions of living in the present moment. All appearing transient events just catch the attention of our mind, and then they disappear again. In the doing mode, we judge our emotions as negative or positive ones. The aim is to remove the negative emotions and keep the positive ones. On the contrary, in the being mode, we learn to handle the negative emotions, thoughts and feelings without direct acting to remove this negative experience. Similarly, we perceive the ideas such as "do this or do that" only as events of the mind that do not require our immediate reactions. However, it does not mean that this being mode is a state where all activity stops. On the contrary, people can be active also in the being mode, and they can be inactive in the doing mode. The difference is in the attitude to achieve the goal. For example, people can try to relax so much that they get into the doing mode. Then they are irritated, tense and dissatisfied. On the other hand, they can wash the dishes and focus on conscious perceiving of every movement done in this activity. They do not focus on the remaining time to finish this activity. In this way, they are in the being mode (Segal, Williams, Teasdale, 2002).

It is possible to switch between the "doing mode" and the "being mode", but the speed of switching depends on the level of stress and tension, the current psychological conditions, as well as on the amount of relaxing activities, time and the given options. Several activities help people to switch into the being mode where they can experience a pleasant experience of living "here and now". This switching is quite fast if we employ physical activity, sport, playing musical instruments, sauna, muscular relaxation, or we have pleasant meetings with other people. Alcohol and other drugs are generally counterproductive because

they cause only short-term and apparent relaxation. It is just a temporary suppression of tiredness and stress because they will appear again in more significant intensity. All these substances weaken the psychic, and as a result, it is less resistant (Pešek, Praško, 2016). People in the western culture have automatic switching into the "doing" mode, and this mode is activated automatically in ordinary life as well. However, it is necessary to achieve the balance between the "doing" mode and the "being" mode. The first step is that people get aware of other alternatives, and they are free to decide which psychological mode they choose in the given situation (Segal, Williams Teasdale, 2002).

Time planning (planning of activity and relax)

In general, people who work too hard can stay longer hours at work and then handle the housework or study. In the evenings or at the weekends, they spend most of the time relaxing or sleeping. They think that they will feel better in this way. Praško et al. (2006) think that this model of behaving is frustrating because these people do not have enough time for themselves and for pleasant activities they like. As a result, they stop meeting with their friends and family, and they give up exercising and other hobbies. When people do not have enough time for themselves, this can lead to such consequences as the feeling of tiredness and reduced ability to concentrate. Tasks they enjoyed before, become for them unpleasant duties. They get more irritable than before, and they have more conflicts with other people. If they want to change this situation, the most crucial strategy is to create a harmonious lifestyle.

The correct time management has significant psycho-hygienic importance in the prevention of stress. This skill is essential mainly at this time when people are in a constant hurry and time stress. We can acquire more free time with a more rational management of time we have to our disposal. We can elaborate an annual, monthly or weekly plan (Đurdiak, 2001). It is crucial to plan events once a week in such a way so that there is enough time for pleasant activities, contacts with other people, exercising and relax every day. In this way, we can reduce the overload during the day and week as well. The measure of effectivity is not the amount of work done or the number of entertaining activities. It is rather our feeling of satisfaction that we have managed our time well. When we can manage our time well, we experience less stress, and our mind is much calmer. We feel to have our life under control (Pešek, Praško, 2016). Reduction of time loss represents a significant part of the time management. For example, long superficial dialogues or meaningless watching of TV "steal" our time (Đurdiak, 2001). Many people have difficulties in managing their time. For this reason, they often experience problems such as chaotic activities, unbalanced time plan, delaying of tasks or excessive working. In this case, it can help them to take notes of planned activities during 14 days. They should also mark whether they fulfilled the given activities during each day. The analysis of the obtained results can help us in evaluating whether we can manage our time in a realistic and structured way. Creation of the daily regime means that we introduce time order in our activities. This regime helps us to create a certain rhythm which favourably influences our body. On the contrary, sudden changes in this rhythm exhaust our body.

For rational time management, Pešek and Praško (2016) recommend the following steps: (1) *We should have a balanced daily time plan. It should contain performing and relaxing activities (it should contain at least 30% of activities aimed at performance such as work or study. This daily time plan should also contain at least 30% of activities focused on delightful, relaxing activities and fun)*, (2) *It is good to reward ourselves with a short relaxing activity after the time of doing activities aimed at the performance (it is useful to plan less appealing or performing activities at the beginning of the working day. After a particular time, we can reward ourselves with a short 10-minute relaxing activity such as tea or coffee break, snack or listening to music we like. In the afternoon, the number of performing activities should reduce, and there should be more delightful activities)*, (3) *It is useful to divide longer tasks into*

smaller parts (it is good to do just one task at the same time and do not switch between several activities or start another activity immediately after finishing the previous one. We should have short breaks between activities), (4) *It is useful to write the monthly, weekly or daily plan in advance with a realistic schedule and time reserve (it is enough to write just keywords and colourfully differentiate the planned activities)*, (5) *This time plan is not an order; it is just our guidance (in case when we are not successful in fulfilling it, we can analyse possible reasons of this failure without being angry at ourselves)*, (6) *The set amount of time for performing an activity is more important than the amount of work done (if we plan that we want to do one activity for one hour, it is necessary to perform this task only one hour regardless the amount of work we managed to do. In this way, we learn to accept the self-discipline, and we reduce the risk that we will not have enough time for other planned activities)*.

To manage the time correctly, we should assess the importance of the given tasks, duties and activities. We can classify them in four categories: *important – urgent, important – not urgent, not important – urgent and not important – not urgent* (see Picture 2) We will mainly focus on the important activities. However, we should not forget the activities which are "important – not urgent" because these activities are satisfying, meaningful and their neglecting can lead to stress. In order to increase the time for "important" activities, we can reduce the time for activities we have assessed as "not important and not urgent". In practice, it means that we will assess the importance of tasks. If the tasks are less important, we will not do them at 70%; we will learn to modify them, to delegate them to other people or to refuse them. The time reserve for planned activities can help us to solve important and urgent tasks (Pešek, Praško, 2016).

Picture 2: Examples of four categories of tasks and activities according to their importance and urgency

TASKS ACTIVITIES	URGENT	NOT URGENT
IMPORTANT	<i>My colleague suddenly gets ill and it is necessary to substitute him. My car which I need, breaks down. I am in an unpleasant emotional state.</i>	<i>Preparation of an important presentation. To spend time with family and friends. Sport, hobbies, learning of a foreign language.</i>
	<i>To manage it personally as soon as possible</i>	<i>To plan and carry out these tasks continuously</i>
NOT IMPORTANT	<i>Tidying of a flat Doing homework with children Updating of the catalogue of social services for the Regional Office</i>	<i>Reading of tabloid newspapers and magazines Watching TV Playing PC games</i>
	<i>Delegate to somebody else or to do it just at 70%</i>	<i>To do it only a short time for relaxing or postpone it</i>

Many people have a problem with time management because they are fully occupied with activities from the categories "urgent and important" and "urgent and not important". When they want to relax, they often choose activities only from the category "not important – not urgent". At the same time, they postpone or forget activities that are in the category "important and not urgent". These activities are important for our general satisfaction, and they give a deeper meaning to our life. If we neglect these activities, they slowly become "important and urgent" activities or problems, and we get in the stress. For

example, longer neglecting of our physical condition and nutrition can lead to health problems in higher age. Longer neglecting of our partner because of excessive working can lead to our separation when he/she finds somebody else. Subsequently, the person with workaholic tendencies will have to deal more time with conflicts and divorce (Pešek, Praško, 2016).

Plan for the weekend belongs to the weekly plan. It should contain at least one sport activity (minimally one-hour long, such as running, swimming, cycling) and one contact with friends (at least, a two-hour-long meeting). At the end of the week, it is essential to revise the plan and its fulfilling. There should follow some kind of rewarding (e.g. appraisal, small reward) after this controlling. Introducing an order in our issues means that we can use our energy better. On the contrary, disorder leads to distractibility and unrest. We can save our energy when concentrating on what we are doing and if we know the purpose of our actions. (Đurdiak, 2001).

Relax and relaxing activities

Research results show that people who set only the longterm aims are less happy than people who set short-term and more specific aims. The clearer is the objective, the earlier we concentrate on the given activity. At the same time, we avoid the possible distraction of our attention (Jackson, Csikszentmihalyi, 1999). It is necessary to plan also the relaxing activities and include them in the day plan (small pleasant activities), the weekly plan (meetings with friends, physical activities) and the annual plan (e.g. a holiday). In this context, Pešek and Praško (2016) recommend to divide delightful, relaxing activities into "pleasure" and "satisfaction". "Pleasure" contains all activities that provoke mainly intense and momentaneous emotional or sensual experience (e.g. eating). "Satisfaction" includes our more prolonged activities. These activities take our energy, and they weaken our conscience. We focus on other issues, e.g. we deal with some tasks, we learn something new, or we do a favour to a friend who needs our support. Both types improve our mood, and they lead to the feelings of meaningfulness and general relaxation. Research done by Csikszentmihalyi (2015, in: Pešek, Praško, 2016) confirm that free-time activities which require our effort, creativity or skills represent the most physically and psychologically relaxing activities (activities such as sport, games, artistic activities and hobbies). According to Csikszentmihalyi (1990), these activities together with developing of symbolical skills (poetry, philosophy or mathematics) can help us to achieve optimal living - the state of "flow". In this state, some activity can absorb us so much that nothing else seems relevant to us. Living itself is so joyful that we will do this activity despite the costs related to it. Just this activity is essential for us.

We would like to emphasise that longterm inactivity is not a relax because it does not fasten our regeneration, but it leads to atrophy (e.g. by insufficient moving our striated muscles begin to atrophy. A similar process occurs with the nerve cells as well.) Active relax depends on the type of work people perform. People who work mentally relax by physical activities and, on the other hand, physically working people enjoy relaxing by mental work. To improve relaxing, we recommend to change the surroundings. An ideal situation is when we spend two or three hours doing outdoor activities every day. The best surrounding for relaxing and recovering is nature (e.g. hiking, sport, manual work). During the week, at least one day we should devote to relax. Otherwise, we can get chronically tired (Đurdiak, 2001). More permanent and better relaxation of our body starts after several days what we have left the surroundings connected with our "doing" mode or stress. For example, this type of relaxation occurs when we have an extended weekend at the cottage or longer holiday (Pešek, Praško, 2016).

If we deal only with activities we "should" or have to do, we gradually lose the joy in our life. We can forget experiencing the joy if we do not use our emotions. They weaken significantly. Without feeling the joy, our performance will be weaker as well. In this way, the activity gets harder, and the amount of tasks does not decrease. On the contrary, there are more and more

tasks we have to do. If we do not have time for our delightful activities, we get into a vicious circle: the less delightful activities we do, the more unhappy we feel. The less joy we experience, the less we will involve in delightful activities. If we want to stop this vicious circle of losing the joy in our life, it is essential to find the balance between the tasks (duties), delightful activities and relax. We will know that this process has been successful if we handle less pleasant tasks more quickly. We will notice that we are not angry, we are kinder to other people, and we have more vitality and energy. (Praško, Prašková, 2001).

Some people say that they are in permanent stress, and they should relax more, but they do not have time. These people often have tendencies to the perfectionism, saying that they "have to" work all the time, look after their household and do other tasks. Otherwise, they would feel empty and guilty for doing nothing. Stressful attitudes can also hinder the relax. It is essential to get aware of these attitudes, think and doubt about them. Subsequently, we have to substitute them with more rational attitudes (see Picture 3) (Pešek, Praško, 2016).

Picture 3: Examples of inadequate attitudes and their possible alternatives

AN INADEQUATE ATTITUDE	A MORE BALANCED ATTITUDE
<i>I have to work all the time; otherwise, I am lazy.</i>	<i>Regular and sufficient relax contributes to higher working performance</i>
<i>I have to do something useful all the time to use the time productively.</i>	<i>Many tasks are not so important, I can do them only at 70% and then I can relax. Relax supports the regeneration of my energy.</i>
<i>I do nothing in time.</i>	<i>I have much work. However, if I organise my time correctly, I will do what is necessary.</i>
<i>I have to be successful in everything.</i>	<i>I am happy if I am successful. However, if I fail in something, nothing wrong will happen. On the contrary, this experience of failure can enrich me.</i>
<i>Small negligence or mistake can result in a catastrophe with far-reaching consequences</i>	<i>Small negligence usually results in small or no negative consequences</i>
<i>The value of individuals depends on their success and working performance</i>	<i>Their success and working performance can determine the value of individuals, but there are also other criteria, such as how they handle their problems and adversity.</i>

One of the main characteristic features of stressful attitudes is that they are factually incorrect or unrealistic. They often represent excessive requirements for oneself and other people. They are not constructive, i.e. they tend to hinder and not help us in fulfilling our aims. They influence our perception in a way that we selectively notice those events that will confirm our attitudes. At the same time, we ignore those facts that will question these attitudes. Behaviour that allows us to fulfil our attitude leads to strong positive emotions. On the contrary, behaviour disturbing our attitudes leads to intense emotional stress (Pešek, Praško, 2016).

To achieve physical and mental relaxation, we can use different forms of muscle relaxations, calm breathing or other relaxation techniques. It is also essential to keep the rules of sleeping hygiene as well as the rules of correct nutrition.

Mindfulness

A tool that helps us to switch consciously from the doing mode into the being mode is mindfulness. This concept is a translation of the Indian word „sati“. Mindfulness is based on the ability to focus on the present moment. It requires full participation in that

experience and an attitude of nonjudgmental acceptance. It is an significant concept in both Western psychology and various Eastern spiritual traditions (Marlatt et al., 2004). If we are able to decide what we will perceive and how we will perceive it, we get the so-called „leading gear lever“ which allows to change psychological degrees according to our needs (Segal, Williams, Teasdale 2002, see also Šlepecký, Praško et al., 2018). Currently, there does not exist a common definition of mindfulness. Some authors understand it as a situational characteristic feature or a quality of conscience. Other authors define it as a layout of personal features or abilities. For others, it represents a way of processing the contents of experience (Látalová, Pillárik, 2014). Western psychology defines mindfulness as a cognitive skill or a metacognitive state of detached awareness (Marlatt et al., 2004). Kabat-Zinn (1994) describes mindfulness as a form of meditation in everyday life. It means that we focus our attention in a certain direction, consciously at the present moment and without judgement (Kabat-Zinn, 1994). Benda (2007) emphasises that mindfulness is a common ability of mind and all people are equipped with this quality (to some extent). We can train and develop it, e. g. the skill to concentrate. In contrast to metacognitive skills, mindfulness does not include awareness at the level of concepts. When compared to observation, mindfulness is passive and receptive. Mindfulness (as the ability to record objectively all mental and physical phenomena experienced at the present moment) has an open, accepting (non-judging), as well as kindly curious attitude (Benda, 2011).

Mindfulness as a means to, or form of, acceptance is an ancient concept (Fruzzetti, Iverson, 2004). It is directly related to the emotional balance, pro-social ethical values and learning about the four immeasurable qualities: compassion, loving-kindness, empathetic joy and equanimity (Wallace, 2006, in: Látalová, Pillárik, 2014). Several empirical findings confirm the positive influence of applying strategies of mindfulness during the last decades. They observed a positive influence of mindfulness on improvement of health and the immune system (Baer, 2007), increasing of well-being (Baer, 2007), emotional experiencing and emotional regulation (Kabat-Zinn et al., 1994), memory (van Vugt, 2015), positive workplace impacts (Lyddy, Good, 2016), improvement in the area of interpersonal relationships (Hayes, 2004), reduction of stress (Shapiro et al., 1998), prevention of the burn-out syndrome (Carson, Langer, 2006). In fact, there are seven „miracles of mindfulness“ that involve attention, understanding, and transaction or transformation (Nhat Hanh, 1998, in: Fruzzetti, Iverson, 2004). Here is their definition: (1) *mindfulness is a means of experiencing* (full awareness, contacting) of everything what is in our presence, (2) *mindfulness is a means of facilitating other people's presence* (awareness), (3) *mindfulness is a means of nourishing or supporting objects of our attention*, (4) *mindfulness of others is a means of ameliorating their suffering*, (5) *mindfulness is a means of "looking deeply" or observing the relationships and interdependence among us*, (6) *mindfulness is a means of understanding, or becoming aware of connections between individuals and their histories, environments, and us*, and (7) *mindfulness is a means of transformation of suffering into being, into effective action, into acceptance, into freedom, and/or into peace and joy*. These principles of mindfulness were successfully translated into individual psychological skills. They have important treatment effects across many studies (Fruzzetti, Iverson, 2004).

According to Segal, Williams, Teasdale (2002), the ability to act with mindfulness allows us to switch off the „autopilot“ and get aware of the state of our own mind. In this way, it is possible to switch between the „doing“ mode and the „being“ mode. The contents of ideas is not important. We passively observe them, we do not judge their validity, we only accept them together with their emotional impact. The basis is the observation and acceptance of our own ideas and emotions. We have to adopt the position of „an overview of a distanced non-participating observer“. Linehan's mindfulness skills (1993, in: Fruzzetti, Iverson, 2004) consist of two separate, but very connected subsets: the „*what*“ skills (what to do to be mindful) and the

„*how*“ skills (how to engage in these behaviors). The „*what*“ skills include: (1) *observing, noticing, or becoming aware of what is present* (inside the person or outside), (2) *describing what has just been observed. The used language is truly descriptive*, and (3) *participating fully in the behavior* (feeling, thinking sensing, acting), *without many self-conscious mental activities; letting go of extraneous verbalizations* (e.g., descriptions, evaluations, judgements). The „*how*“ skills include: (1) *being non-judgemental, without right-wrong, should-shouldn't, and good-bad evaluations*, (2) *paying attention to one thing at a time in the present*, and (3) *putting energy only into actions or activities that are in accordance with one's values and life goals* (e.g., „describing“ a fire burning out of control would not be mindful. However, getting to safety, warning of others, or attempting to extinguish it safely would be mindful).

5 Conclusion

Following the facts mentioned above, it is evident that society should pay much more attention to the issue of preparation for life in the old age and leaving of employees to retirement. The current bibliography offers detailed information dealing with characteristic features of seniors' personalities and the periodisation of the human life cycle. It describes the physiological, psychological and social changes happening to people in the old age, as well as the endogenous and exogenous determinants of seniors' personalities. However, the society should more thoroughly implement this system of preparation of adults for retirement into practice (Határ, 2011). At the same time, this idea represents an appeal for the social-political agenda of every state which should take into consideration relevant scientific findings and recommendations when satisfying the needs and interests of seniors.

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Primary Paper Section: A**Secondary Paper Section: AE, AM**

TRANSFORMED REFLEXIVE VERBAL FRAMES IN A FRENCH-SLOVAK CONTRASTIVE PERSPECTIVE

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Abstract: The paper presents results of a contrastive study of transformed reflexive verbal frames in Slovak and in French. It is a continuation of the research on verbal valency, in terms of collocability of predicates and their complements, of Slovak full verbs and their French semantic equivalents. Authors point out at interrelations between reflexivity and other verbal properties such as impersonal character of the utterance. Knowledge of these binds can be a facilitating factor in communication and acquisition.

Keywords: linguistics, grammar, verb, Slovak, French.

1 Introduction

Verbal valency frames belong to the phenomena in which systemic differences between typologically different languages such as French and Slovak can be observed with clarity. The verbal valency is closely bound to some semantic and syntactic properties of verbs, namely personal or impersonal nature of the verb and presence or absence of reflexivity. These features are particularly important in the study of certain types of verbal constructions and are related to the question of syntactical complexity of the sentence.

Slavic languages (among them Slovak language) are characterized by a certain number of specific features that distinguish them from other linguistic groups (e.g. Romance languages or Germanic languages). The presence of verbal flexion leads to the existence of several sentence types that do not have perfect formal counterparts in languages belonging to the above stated groups. The paper is a case analysis of two structures of this kind. To do so, attention will be put, in the first place, to theoretical description of syntactic realities of Slovak language. In the second step, authentic corpus material will be described and analyzed. Finally, results of the analysis will be discussed and conclusive remarks will be gathered.

2 Theoretical framework

In Slovak, each verb is either reflexive or non reflexive. Reflexivity is a formal feature of verbs which take up *sa* or *si* component. According to the morphosyntactic value of *sa* / *si*, three cases appear:

1. *Sa* / *si* is a lexical morpheme, an integral part of the verbal form (e. g. *smiat' sa* – ríre / to laugh; *všimat' si* – noter / to note, to observe). These are reflexive verbs.
2. *Sa* / *si* is a reflexive pronoun and enters the verbal clause (*holit' sa* – se raser / to shave; *verit' si* – avoir confiance en soi / to have confidence in oneself). It is the reflexive variant of non reflexive verbs.
3. *Sa* / *si* is a grammatical morpheme and marks the specific value of the verbal form in a construction of a certain type, e. g. *hovori sa* – on dit / they say (literally it is said); *robilo sa* – on faisait / it was being done. These are reflexive forms of non reflexive verbs. (Ružička et al. 1966 : 376).

Without the obligatory presence of *sa* / *si* component in the whole paradigm, reflexive verbs would be viewed as incomplete, incorrect or semantically modified. The lexical morpheme *sa* / *si* has no direct semantic influence on the verb as such, e. g. *narodit' sa* – naître / to be born (Ružička 1966 : 377-378). Within the group of reflexive verbs, there are reflexive verbs without non reflexive variants, e. g. *smiat' sa*, *všimat' si* and reflexive verbs with non reflexive variants (derived reflexive verbs), e. g. *volat' sa* – *volat'* (s' appeler – appeler / to be called (somehow) – to call).

A certain number of non reflexive verbs have reflexive variants. The reflexive variant is present in the whole paradigm of the non reflexive verb. *Sa* / *si* is an accusative (*sa*) or a dative (*si*) pronoun expressing the identity of the agent (Ružička 1966 : 384). The valency of the reflexive variant is the same as the valency of the non reflexive verb it belongs to. Thus, a transitive verb stays transitive: *umývat' niekoho, niečo* – *umývat' sa/seba* (laver – se laver / to wash – to wash oneself; *pomáhat' niekomu* – *pomáhat' si/sebe* (aider – s' aider / to help – to help oneself).

Non reflexive verbs sometimes take reflexive forms. In this case, *sa* is a morphological morpheme and does not have a pronominal value. *Si* cannot appear here. Reflexive constructions are used to form simple or composed predicative forms in order to resolve conflicts between the verbal construction and the semantic valency value (intencná hodnota¹) of the verb (Ružička et al., 1966 : 387). Among reflexive forms of non reflexive verbs, there is a) passive reflexive form (pasívny zvrtný tvar) and b) impersonal reflexive form (neosobný zvrtný tvar).

If the reflexive form appears in a noun-verb predicative clause the grammatical subject of the sentence is the object of the verbal action (the patient) and not its actor (the agent) as it might have been expected from semantic valency of the verb. However, the semantic valency of the verb remains unchanged, e. g. *Reči sa hovoria a chlieb sa je.* (Les paroles se disent et le pain se mange. / Words are spoken, the bread is eaten. – Slovak proverb). In this case, the reflexive form has a passive value and it is synonymous with composed passive form. It is possible to interchange the two, e. g. *styk sa obmedzil* (le contact s'est limité) = *styk bol obmedzený* (le contact a été limité). However, the passive reflexive form is limited to the 3rd person both singular and plural of personal transitive action verbs. The subject of the passive reflexive form is non-animated. The logical subject is rarely expressed.

The impersonal reflexive form of non reflexive verbs is used to resolve the conflict between the construction of the „one-constituent“ sentence and the presence of a personal verb without changing its semantic valency. (Ružička 1966 : 388). The logical subject of the sentence is either implicite or expressed by a dependent case. The impersonal reflexive form is available for all reflexive verbs, excluding transitive verbs with explicit object and auxiliary verbs.

According to Oravec, Bajžíková et Furdík (1986 : 130), semantic valency of verbs can be modified by elimination of constituents or by the presence of reflexive marker *sa*. *Sa* act as a reflexive pronoun with verbs expressing conscient and actual action (and not an inconscient or usual one), e. g. *obliekat' sa* (s'habiller / to dress, to put on some clothes). For these verbs, *sa* does nothing more than redirect the action towards the subject. Elsewhere, it is a mean to diminish the complexity of the semantic valency of the verb. The reflexive *sa* limits verbal construction simplifying it on the right and making verbs change their semantic valency. The reflexive *sa* limits the verbal construction on its left neutralising actional relations of personal verbs to their agents. In this way, impersonal reflexive form is created. *Sa* has a deagenting function, exposing the agent from its usual position.

Ružička (1960a) deals with the role of impersonal verbs in the grammatical system of Slovak. He suggests that, in Slovak, impersonal verbs create a particular sentence type. The complexity of the sentence is based on the difference between personal and impersonal verbs. Among „one-constituent“ sentences, „no subject“ sentences are defined, i. e. those in which the logical subject is moved from the position of the

¹ The term *intencná hodnota* is linked to the theory of semantic valency (*slovesná intencia*) as a grammatical category of verbs (Paulíny 1943; Ružička 1960a,b, 1961, 1966; Kačala 1989; Sokolová 1995).

grammatical subject to another position within the sentence., Let us observe two different ways of expressing the same action in the following example: *chlapec zíva – chlapcovi sa zíva* (fr. le garçon baille – *cela baille au garçon / eng. the boy is yawning – *it is yawning to the boy) (Ružička, 1960 : 6).

Among one-constituent sentences, verbal sentences have a special place thanks to their grammatical features. The basis of their construction is a finite verb in 3rd person singular and neuter (Ružička 1960 : 6), ex. *prší – il pleut/it rains, it is raining; snežilo – il a neigé/it has snowed; bolo by sa robilo – cela aurait été fait / it would have been being done*². This verbal form has no personal meaning, as it can never take up a nominative neuter personal pronoun *ono* (cela / it). This grammatical feature is present in all verbal one-constituent sentences, not only those containing impersonal verb, but also those containing a personal verb used impersonally (*zabílo ho – cela l'a tué / it killed him; duje – il vente / it (the wind) is blowing*) and those containing impersonal reflexive form of personal verbs (*zíva sa mi – je baille / I am yawning; sedí sa mi dobre – je me trouve bien à être assis, je suis assis confortablement / I sit well, *it sits well (to me); ide sa – on y va / let us go, there we go*) (Ružička 1960 : 6-7). „No-subject“ verbal form is a matter of morphology and syntax. The needs of some syntactical constructions make the verb let aside a component of its signification, especially if this component is a secondary one. That is the case of person for verbs. (Ružička 1960 : 7).

Changes to semantic valency or other particular ways of use of verbs lead necessarily, according to Ružička (1960 : 21) to modifications in the expression of the logical subject and result in sentences with general or indefinite subject. General (or indefinite) logical subject or logical object is the one that remains implicite, but is not expressed by a noun neither by a personal/demonstrative pronoun.

Speaking of verbal structures described so far, as well as other similar structures, Ivanová et al. (2014) use the term „transformed verbal structures“ (slov. transformáty):

- A. Transformed reflexive structures (slov. reflexívne transformáty) resulting from deagentisation and passivation. Among them, the reflexive passive (slov. zvrtné pasívum, marked as structure 1a) and no-subject reflexive form (slov. bezpodmetový zvrtný tvar, 1b).
- B. Structures with a reflexive disposition (slov. dispozičné reflexívne konštrukcie), either personal (with or without object), if the verb is transitive (1c) or impersonal (1d), if the verb is intransitive.
- C. Participial transformed structures (slov. participiálne transformáty), resulting from the processes of passivation and deagentisation. Among them participial passive (slov. participiálne pasívum, 2a) and a marked no-subject participial form (slov. príznakový bezpodmetový participiálny tvar, 2b)
- D. Resultative non-possessive structures with a link verb (slov. neposessívne rezultatívne konštrukcie so sponou, 3a) and resultative possessive structures with the link verb byť (slov. posessívne rezultatívne konštrukcie so sponou mať, 3b).
- E. Nominalised participle (slov. nominalizované participium), standing between verbs and nouns. This form has kept its valency, but took up the passive or resultative features.

The theoretical approach of Ivanová et al. (2014) was later adopted by Zázrivcová et al. (2016) to study Slovak and French verbal structures in a contrastive perspective.

3 Material and methods

The study focuses on a specimen of 3 Slovak personal verbs and their French equivalents: *tvrdiť* (fr. *affirmer* / eng. to claim), *čakať* (fr. *attendre* / eng. to wait) et *nájsť* (fr. *trouver* / eng. to find). These verbs are randomly selected among 15 most frequent Slovak verbs in the contrastive Slovak-French study of verbal valency frames conducted by Zázrivcová et al. (2016)³. According to the methodology used by Zázrivcová, first of all, different meanings of each Slovak verb were identified and their definitions (semantic descriptions), valency schemes and synonyms were described. These descriptions were compliant with those presented in Ivanová et al (2014). Secondly, French equivalents were identified for every meaning of each Slovak verb. The equivalence was established by comparing semantic valency structures of the Slovak and the French verb. Exemplification of valency structures is authentic, constructed on the basis of the working corpus sme2011. Examples of occurrences of French equivalents are taken up from *lemonde0.3* corpus.

Leaning on Zázrivcová findings, we observed similarities and differences between Slovak and French verbs in order to establish a degree of their equivalence. The following scale is designed to assess equivalence of valency structures :

- 1 – total functional identity of valency and non valency constituents
- 2 – total functional identity of valency constituents
- 3 – partial functional identity of valency constituents
- 4 – zero functional identity of valency constituents

The scale has been tested with basic valency structures (Chovancová, Ráčková, Veselá, Zázrivcová, 2017). However, it has not yet been applied to transformed valency structures.

This study focuses on analyzing the presence of transformed valency structures 1a and 1b, i. e. reflexive passive and „no-subject“ reflexive form (as defined by Ružička 1960a, 1960b, 1966; Oravec, Bajzíkova and Furdík 1986 and Ivanová et al. 2014) in a specimen of Slovak-French verbal valency contrastive corpus. The objective is to identify potentially equivalent French verbal valency structures and to look at their degree of equivalence. According to the hypothesis, a) The dominant equivalent French structure of Slovak reflexive transformed structures 1a and 1b is the *on* structure; b) In the formal perspective, the *on* structure in French is supposedly partially equivalent to no-subject reflexive form in Slovak.

4 Data analysis

For each of the 3 analyzed verbs, the attention focuses on the presence of transformed structures 1a and 1b. These structures are presented in the tables below, with semantically equivalent structures in French. Semantic equivalency is based on comparison (identity) of meaning descriptions of Slovak and French verbs proposed in referential lexicographic resources for each of the two languages. The tables below demonstrate partial formal equivalences and, at the same time, total functional equivalences, between structures in the two languages. (Syntactic constituents entering the schemes are designed according to Zázrivcová et al. 2016: Slog – logical subject, Sn – a noun in nominative case in Slovak, VVže – subordinate clause introduced by the conjunction *že* in Slovak, Sd – a dative noun in Slovak, o SI – a noun in prepositional local case introduced by the preposition *o* in Slovak, VVkor – a subordinate clause corresponding to the nominal constituent in the same role, S_{COD} – a direct object noun in French, INF – an infinitive, PSque – a subordinate clause introduced by the conjunction *que* in French, PRON_{pers, ind} – a personal indefinite pronoun *on* in French, VF – a finite verb etc.).

² French and English translations in this part, proposed by authors, are approximative, sometimes literal. They should be used to facilitate the understanding meanings of Slovak examples, still bearing in mind that syntactic patterns commented and exemplified are fundamentally different in Slovak and in French and/or English language.

³ The selection was based on frequency list generated from monolingual specialized corpus sme2011, part of written corpora of Slovak National Corpus.

Tab. 1. Correspondences of transformed structures of the verb *tvrdiť* I and its French equivalents⁴.

V-SL	N°	Valency pattern in Slovak	Valency pattern in French	V-FR
tvrdiť I	1a	[Slog: S _n /VV _{žc}] – VF _{refl pas} – (o S _l)	PRON _{pers, ind} – VF – S _{cod} /INF/PS _{qu}	affirmer
			PRON _{pers, ind} – VF – S _{cod} /INF/PS _{qu}	prétendre
			PRON _{pers, ind} – VF – S _{cod} /INF/PS _{qu}	avancer

The imperfective verb *tvrdiť* I meaning "hovoriť ako isté" (fr. dire comme vrai / en. claim st true)⁵ receives a series of 5 French equivalents (*affirmer*, *assurer*, *avancer*, *prétendre* and *soutenir*). The transformed structure 1a is attested, in *lemonde0.3*, for three of them (*affirmer*, *avancer* and *prétendre*):

- (1) Pritom sa tvrdí, že vaše vrcholné dielo ešte len príde.
- (2) Cela fait vingt ans qu'on affirme qu'il faut baisser les coûts du travail pour augmenter la part des investissements.
- (3) Xavier Musca est sans doute à l'Élysée le plus persuadé que l'Europe est au bord du gouffre. Et s'empporte lorsqu'on prétend que Nicolas Sarkozy met en scène la crise à des fins politiciennes.
- (4) Pour le ministère de l'écologie, il s'agit d'un texte équilibré. S'agissant de la disparition de la mention des condamnations des entreprises, on avance une „impossibilité juridique, la Chancellerie étant opposée à ce qui relèverait de la violation du casier judiciaire“.

In all the three cases, French valency schemes contain less constituents on the right than the Slovak one. In other terms, French verbs can be seen as bivalent (COD is the only constituent present on the right) while the Slovak can be considered as trivalent (two prepositional nominal constituents are potentially present on the right). On the left, indefinite personal pronoun *on* can be found in French and a vacant position is observed in Slovak, the logical subject (marked in [...]) has been displaced to the right.

For the imperfective verb *čakať* I with perfective variants *počkať*/*dočkať*, as well as for the imperfective verb *čakať* II with no perfective variant, the basic correspondences of transformed structures are shown in the tables 2 and 3. Different meanings of the same verb are designed by numbers, e. g. *čakať* I-1 means "zotrvať v pokoji na istom mieste" (fr. rester en un lieu, eng. stay in the same place), *čakať* I-2 means "zotrvať za určitým cieľom" (fr. espérer la survenance de quelque chose, eng. wait for something to happen) and *čakať* I-3 means "predpokladať, že sa niečo stane" (fr. rester en un lieu, l'attention étant fixée sur quelque chose qui doit survenir; eng. expect something to happen).

For each of the three meanings of *čakať* I, 1b structure are observed in *sme2011*. The absence of the subject on the left is noticed, as well as the presence of a reflexive verbal form. In French, the position on the left of the verb is occupied by the pronoun *on* and the verb does not take a reflexive form. For *čakať* I-1, the right side of the verb is perfectly equivalent in Slovak and in French. For *čakať* I-2 and *čakať* I-3, there is a crucial difference on the right, concerning the syntactic nature of the nominal constituent (a COD in French, a COI in Slovak). This makes the degree of equivalence fall to 3.

⁴ V-SL – Slovak verb, N° – type of the transformed structure (1a or 1b), V-FR – French verb equivalent to the Slovak verb.

⁵ The homonymous imperfective verb *tvrdiť* II meaning "robiť tvrdým, tvrdším" (fr. rendre ferme / en. make st harder) is semantically equivalent to French verbs *affirmer* or *durcir*. The only transformed structure found in *sme2011* and *lemonde0.3* corpora was 4a for both languages, with the degree of equivalence 1.

Tab. 2. Correspondences of transformed structures of the verb *čakať* I (*čakať* / *počkať*, *dočkať*) and its French equivalent *attendre*.

V-SK	N°	Valency pattern in Slovak	Valency pattern in French
I-1	1b	VF _{refl, imp} – ADV _{loc} – ADV _{temp}	PRON _{pers, ind} – VF – ADV _{loc} – ADV _{temp}
I-2	1b	VF _{refl, imp} – na S _a /VV _{kor}	PRON _{pers, ind} – VF – S _{cod}
I-3	1b	VF _{refl, imp} – na S _a /VV _{kým/kedy/čim} /že	PRON _{pers, ind} – VF – S _{cod}

The 3 meaning of the Slovak imperfective verb *čakať* I-1 (ex. 5, 6), I-2 (ex. 7, 8), I-3 (ex. 9, 10) form 1b structure as follows:

- (5) A čaká sa tam do 180 dní.
- (6) Čaká sa len výnimočne.
- (7) Páchatel'ov podvodu zadržali v Česku a čaká sa na ich vydanie na Slovensko.
- (8) Čaká sa na nové prepočty.
- (9) [...] čakalo sa na vypadnutie Zdena Cháru alebo Andreja Meszároša v play-off NHL.
- (10) Momentálne ministerstvo zmeny nechystá, čaká sa na koalíčnú dohodu.

The same 1b structure is attested for the 3 corresponding meanings of the French verb *attendre* (*attendre1* – ex. 11, 12; *attendre2* – ex. 13, 14; *attendre3* – ex. 15, 16):

- (11) À Benghazi, au quartier général politique des rebelles, on attend.
- (12) Des mois qu'on attendait, et on allait voir ce qu'on allait voir, lundi 10 octobre, avec la diffusion des deux premiers épisodes.
- (13) Dans le centre, on attendait l'eau comme un ennemi invisible, probable mais lent à dévoiler sa menace.
- (14) Or, pendant les quatre ans qu'elle a passés à Bercy, on a peu entendu Mme Lagarde articuler sa vision sur les grands déséquilibres financiers internationaux, sur la politique de change chinoise, ou sûr les contrôles des flux de capitaux – des exemples types des problèmes sur lesquels on attend le chef du FMI.
- (15) Neuf ans qu'on attend le retour de l'acteur Peter Mullan derrière la caméra, pour un essai transformé.
- (16) À la mairie, on attend le procès des „quatre de Debrecen“ avec appréhension, indignant à l'avance de voir Tatarszentgyörgy montré du doigt.

The imperfective *čakať* II with no perfective variant receives, for its third meaning „predpokladať (často neprijemnú) udalosť“ (fr. prévoir, eng. foresee) *attendre* and its reflexive variant *s'attendre* as two semantic equivalents in French:

Tab. 3. Correspondences of transformed structures of the verb *čakať* II (imperf.) and its French equivalent *attendre*.

V-SK	N°	Valency pattern in Slovak	Valency pattern in French	V-FR
II-3	1a	[Slog: S _n /VV _{žc}] – VF _{refl, pas}	S _s – VF _{pas}	attendre

The structure 1a is attested in Slovak (ex. 17) and in French (ex. 18):

- (17) Čaká sa tvrdá debata, ako zmeniť Lisabonskú zmluvu a ktoré krajiny do toho pôjdu.
- (18) Pour le reste, la baisse du déficit est attendue de deux séries de mesures.

The perfective Slovak verb *nájsť* (fr. trouver, eng. to find), opposed to the imperfective form *nachádzať*, is attested with three meanings. For the first two of them, the transformed structure 1a is available.

Tab. 4. Correspondences of transformed structures of the verb *nájsť* and its French equivalent *trouver*.

V-SK	N°	Valency pattern of Slovak	Valency pattern of French
<i>nájsť</i> ¹	1a	[Slog: S _n] – VF _{refl, pas} – ADV _{loc} – ADV _{temp}	S _n – VF _{refl, pas} – ADV _{loc} – ADV _{temp}
			PRON _{pers, ind} – VF – S _{cod} – ADV _{loc} – ADV _{temp}
<i>nájsť</i> ²	1a	[Slog: S _n] – VF _{refl, pas} – ADV _{loc} – ADV _{temp}	PRON _{pers, ind} – VF – ADV _{loc} – ADV _{temp}

For the verb *nájsť*¹, "meaning hľadáním alebo mimovoľne objaviť", the following examples of 1a structure can be found:

- (19) Po čase sa originál stratil a našiel sa až v roku 1993 v Barcelone.
 (20) Začiatkom roka sa v Bratislave našla päťstoeurová bankovka.

For the French equivalent *trouver*, with the same meaning, 1a is equally present:

- (21) On n'a pas trouvé de remède à la crise de la famille moderne.
 (22) Dans le fonds de l'ONG Memorial, on a trouvé de nombreuses photos de manifestations.

For *nájsť*², meaning "hľadáním alebo mimovoľne získať" (ex. 23) and for its French equivalent *trouver*, meaning "se procurer, parvenir à obtenir") we find 1a as follows:

- (23) „Našlo sa tam bližšie nešpecifikované technické zariadenie spôsobilé pravdepodobne na odpočúvanie,“ potvrdila hovorkyňa Slovenskej pošty Bela Lisáková.
 (24) Difficile de nier qu'on trouve dans le parti un camp conservateur, et libéral.

5 Discussion

The central point of the study is the notion of equivalence. Identification of equivalence binds between formal syntactic patterns of verbs as well as between underlying semantic structures is based on the following bases: a) lexicographic treatment of lexical units (semantic equivalence of lexical units and their meanings), b) corpus evidence (proof of record of syntactic structures in use), c) native speaker intuition (confirmation of adequacy of some stylistic and pragmatic values of verbal forms and constructions, or their interchangeability in context), the last of the three bringing along an inevitable dose of subjectivity.

The analysis of transformed syntactic structures 1a and 1b of 3 specimen Slovak verbs reveals the existence of basic formal and functional equivalence patterns. First, reflexive passive structure (1a) with explicit logical subject (Slog) at the right side of the verb (eventually holding variable position within the utterance) in Slovak shows functional equivalence to 3 concurrent French structures, namely reflexive passive structure vs. (standard) passive structure vs. *on* structure. Second, the Slovak „non-subject“ reflexive form is equivalent to the French *on* structure. These relations of equivalence need to be further tested on large-scale verbal valency corpora.

1a)

[Slog: S_n/VV_{že}] – VF_{refl, pas} ----- PRON_{pers, ind} – VF
 [Slog: S_n/VV_{že}] – VF_{refl, pas} ----- S_s – VF_{pas}
 [Slog: S_n] – VF_{refl, pas} ----- S_s – VF_{pas}
 [Slog: S_n] – VF_{refl, pas} ----- S_n – VF_{refl, pas}
 [Slog: S_n] – VF_{refl, pas} ----- PRON_{pers, ind} – VF

2b)

VF_{refl, imp} ----- PRON_{pers, ind} – VF

The parallel between „non-subject“ reflexive form and on structure is of particular interest, as it is rarely put forward in contrastive contextualised grammars or in methodology of teaching. Both types of structures are deagentised, i.e. weaken the capacity of the agent to take the subject position. In Slovak and in French, the deagentisation is effectuated through pronominal operators (*sa* in Slovak and *on* in French). Despite different subcategorial belonging of each (*sa* being a reflexive marker and *on* being a personal pronoun), these operators have several common features. Among them, the capacity of introducing a general, indefinable agent. Moreover, both of these markers limit the verbal form, requiring the 3rd person singular or formally equivalent impersonal verb form. Naturally, *sa* and *on* appear in different positions in the syntactic structure. *On* appears on the left side of the verb; *sa* is more mobile within the limits of the valency structure.

More often, French structures with *on* as subject are associated with 1st person plural translational equivalents in Slovak language (placing the personal pronoun *my* /*we*/ in the subject position). This general *we*-perspective is operational in a wide variety of contexts as a functional equivalent of the French *on*. Given this commonly admitted functional equivalence, the question should be asked about potential similarities between *my* and *sa* as markers, of a various kind and various potential, of deagentization.

The concurrence between composed descriptive passive and reflexive passive can be observed in Slovak, as well. It must be noted that the use passive, in general, encounters grammatical and stylistic restrictions in Slovak. Unlike in French, in Slovak the reflexive passive is more frequent than composed passive. It is used to express a usual, repeated action. On the contrary, it cannot be used when it is necessary to express the agent of the verbal action.

Insight into transformed verbal frames leads to another important finding. The equivalence assessment scale taking into account the right side of the valency structure only, used so far to compare basic verbal frames, proves to be insufficient for transformed valency structures. Rethinking a more powerful evaluation tool remains a necessity for further research on the matter.

6 Conclusion

The contrastive Slovak-French study of verbal valency frames shows parallels and differences between transformed verbal structures, focusing on reflexivity and impersonal character. Suppression of syntactic and semantic binds between the agent of the verbal action and the verb itself is assured, in both languages, by operators of pronominal nature. Parallels between these items are seldom highlighted, still they deserve a closer look materialising in larger corpora-based studies.

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Primary Paper Section: A

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DIGITAL COMPETENCES OF FUTURE TEACHERS OF FINE ARTS

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Abstract: The paper deals with the problem of digital competences of university students - the future teachers of Fine Arts, in relation to their cultural awareness and expression systematically developing during their pregradual preparation within the disciplines focused on theory and history of Fine Arts at the Department of Creative Arts and Art Education at the Faculty of Education at Constantine the Philosopher University in Nitra. The paper looks into students' competences of given area via questionnaire based on self-assessment. The author of this paper explores the problem in relation to project goals supported by Slovak Research and Development Agency according to Act No. APVV-15 - 0368 in the context of present requirements of teacher training program in the area of critical thinking and creativity.

Keywords: digital competences, Fine Arts education, self-assessment, critical thinking, creativity.

1 Introduction

Digital literacy can be undoubtedly described as one of the key competences of today's man living in cultural society. The relevance of this issue is evident in the fact, that the Slovak Institute for Public Affairs (slov. *Inštitút pre verejné otázky*) based in Bratislava has been regularly monitoring the issue of digital literacy and informatization of society for the last fifteen years via sociological research which is representative for the population of the Slovak Republic over 14 years of age, in terms of education, age, nationality, size of the residence and regions of the Slovak Republic. Research has been carried out since 2005 in two or three-year periodicity. Each research has reflected so far not only monitored indicators of digital literacy of our population, but also changing conditions of the society significantly determining status of investigated competencies. The results of the research conducted in 2020 were published by Veľšic, Marián: *Digitálna gramotnosť na Slovensku 2020* (eng. Digital Literacy in Slovakia 2020). Indicators of digital literacy are defined and specified in this publication in four areas: hardware control, software control, work with information and services and communication skills (Veľšic, 2020, p. 2).

Digital literacy as a relevant key competence for lifelong learning is also defined in "Recommendation of the European Parliament and of the Council" of 18 December 2006 (2006/962 /EC). This document, in the annex "*Key Competences for Lifelong Learning - European Reference Framework*", defines eight key competences as a combination of knowledge, skills and attitudes, including digital competence.

1.1 Theoretical background

Veľšic defines digital literacy as "*the ability to understand information and use it in various formats from various sources presented through modern information and communication technologies (ICT)*" (Veľšic, M., 2013, p. 2). Definition of digital literacy as an integral part of the "*set of professional skills and dispositions the teacher should be equipped with in order to effectively perform his profession*" as defined by Petlák in Selfreflexion and competences in teacher's work (Hupková, M. - Petlák, E., 2004, p. 98), proved in educational practice during an emergency situation due to the global pandemic of COVID-19 in the spring months of 2020 as a necessity.

State Educational Program (slov. *Štátny vzdelávací program*, hereinafter SEP) of the Slovak Republic as a binding document in addition to the general goals of education sets out the key competencies to which an education should lead to. SEP documents issued and published by the Ministry of Education, Science, Research and Sport of the Slovak Republic, focused on

framework educational content for individual levels of education, contain important information in the context of applying information technologies in education. Considering that the workplace of the author of our paper implements the study programme for Teachers of Fine Arts as double-subject study and from the academic year 2020/2021 there will also be possibility of single-subject study Art Education, both fields of study - bachelor's and master's degree programs preparing teachers especially for the lower and upper secondary education, in our paper we proceed from the documents of SEP for lower secondary education - primary schools (ISCED 2) and SEP for grammar schools in the Slovak Republic (ISCED 3A - Upper secondary education) issued for educational area of Arts and Culture. The document State Educational Program Art Education (Educational Area: Art and Culture). ISCED Annex 2 within the educational topics arranged into methodological series as the 10th states Electronic Media and recommends the application of these educational topics or rather artistic problems: "5.12. *digital image editing / scanning /basic digital image operations /alt.: examples of digital photo editing options on a computer*, 6.11. *image processing / image assembly, layers, filters, transformations, colour variations / font and image /alt.: simulation of layers and filters via mechanical and artistic means*, 7.11. *morphing / shape transformation into another shape through software /alt.: shape transformation into another shape through line drawing, principles of morphing*" (source: SEP. Art education. (Educational area: Art and culture). Annex Štátny vzdelávací program ISCED 2, Bratislava, 2009).

Within the technical skills a graduate of lower secondary education should have had acquired, the document also mentions the mastery of basic graphic operations on a computer. Document SEP Art and Culture (Educational Area: Art and Culture). Annex ISCED 3, Bratislava, 2011 within the content of education for particular years defines thematic units, of which at least two presume direct application of information technologies in educational process. One of them is a thematic unit called Popular and Mass Culture. Electronic media, which in the thematic subject Electronic media within the content focus of the year "*Experiential and active form of perception of an artwork connected with practical activities focused on learning and mastering means of expressions of art and culture*" within the process and educational output specifies the creation of logos, websites and development of students' internet competences. Thematic unit Principles of popular culture, mass culture, electronic media. Cultural communication. Culture and technology within the content focus of the year "*Interpretation of works of art - continuity of interconnection of various works of art through common themes and elements. Forms and functioning of culture*", in the process of specification and educational output mentions work with Internet via thematic area Analysis and interpretation of products of popular culture (source: SEP Art and Culture (Educational area: Art and Culture). Annex Štátny vzdelávací program ISCED 3, Bratislava, 2011).

2 Digital skills of future teachers of Fine Arts from the perspective of higher education

2.1 Research objectives

Aim of our research was to find out what competencies the students - future teachers of Fine Arts studying at the Department of Fine Arts and Education, Faculty of Education, Constantine the Philosopher University in Nitra have, in the field of digital literacy according to self-assessment in relation to expected and supposed experience and skills obtained during secondary and ongoing university studies at bachelor's and master's level with the emphasis on the ICT experience and skills that are absolutely essential for fulfilment of educational goals and content of education in the scope of subjects focused on theory and history of Fine Arts, which the author of this paper teaches at all grades involved in this research.

2.2 Hypotheses of research

We assumed that:

1. Respondents - senior students of university study will percentually evaluate the level of their ICT skills higher (as good or excellent) than students of lower-years.
2. Out of all respondents there will be more of those declaring their skills and experience with the basic word processors, spreadsheets and presentation programs than those, who would not declare such skills.
3. Respondents - senior students will percentually declare control of text or bitmap editors, presentation and graphic programs higher than respondents -junior students.
4. The range of proprietary or free software currently available on the market, specified by respondents having experience with, will be wider with senior students than the junior ones.

2.3 Research plan and research file

The research was carried out in 2019 with data collection in two terms, during the spring semester of the academic year 2018/2019 (1st, 2nd, and 3rd year of Bc. and 1st year of MA degree Teaching of Fine Arts in combination) and during the winter semester of the academic year 2019/2020 (1st year of Bc. degree Teaching of Fine Arts in combination).

Our research sample consisted of 98 respondents, full-time students in the study program Teaching of Fine Arts in combination. 64 students studying in the academic year 2018/2019, particularly 23 students in the 1st year of Bc. degree, 18 students in the 2nd year of Bc. degree, 13 students in the 3rd year of Bc. degree, 10 students in the 1st year of MA degree, and 34 respondents studying in the academic year 2019/2020 in the 1st year of Bc. degree.

2.4 Research methods

The method of data collection was an anonymous questionnaire in printed form containing 10 items, 5 with closed and 5 with partially opened questions. The data collection was carried out by the author of this paper in a limited period of time within the seminars in compulsory subjects intended for smaller groups of students, in order to ensure the largest possible number of respondents of researched group. The introductory 4 items of the questionnaire were devoted to the basic selection characteristics, used to determine the affiliation of a respondent to the relevant study program, year of study, focus on previous completed secondary education, gender and the region of permanent residence. The other items focused on following issues:

1. Level of ICT skills according to self-assessment (being instructed to mark only one out of five options).
2. Way of obtaining acquired ICT skills (being instructed to mark more options).
3. Usage of a computer within the education of a respondent (being instructed to mark only one out of five options).
4. ICT skills, mastery of text or bitmap editors, presentation and graphics programs (being instructed to mark more options by underlining the appropriate answer).
5. Usage of PC in their free time or at work (being instructed to mark more options).
6. Practice or experience in the field of art education or creative action using PC or another type of ICT (being instructed to mark more options).

The method of data processing was a quantitative and qualitative analysis of answers from given questionnaires projected into tables and verbal interpretation of answers, as well as verification or rather evaluation of hypotheses. Due to the nature of the questionnaire including open questions and our ambition to refer to the statements of our respondents (in the tables we use the abbreviation "R") and formulation of their answers, each questionnaire was assigned according to the following key: year number (1, 2, or 3), abbreviation of the degree of education (Bc.

- bachelor's degree, MA - master's degree), serial number (1 - random serial number of the respondent in the given group to process data questionnaire). Due to the fact that we collected the data during two academic years, to be able to distinguish the respondents - students of the 1st year Bc. we used letter "a" in one group of our respondents. Our questionnaires are therefore referred to as: 1Bc1 to 1Bc34, a1Bc1 to a1Bc23, 2Bc1 to 2Bc18, 3Bc1 to 3Bc13, 1MA1 to 1MA10.

3 Research results

As mentioned above results of our research are provided in quantitative and qualitative level in connection with selected items of given questionnaire and by evaluation of previously assessed hypotheses. Each table provides information about the number of respondents in each year. For clearer preferences of certain groups in selected tables (No. 1, 2, 3, 6) numeric data altogether with the percentage are highlighted in italic and bold font. The first table shows respondents' secondary education (see Table 1).

Table 1: Respondents' secondary education

Respondents' secondary education	1. Year Bc. 2019 / 2020	1. Year Bc. 2018 / 2019	2. Year Bc. 2018/ 2019	3. Year Bc. 2018/ 2019	1. Year MA 2018 / 2019	Altogether
	34 R	23 R	18 R	13 R	10 R	98 R
a) Four year grammar school	9	7	4	1	1	22
b) Eight year grammar school	2	2	0	3	0	7
c) Other type of grammar school i.e. 5-year bilingual etc.	0	0	0	0	1	1
d) Secondary vocational school with the focus on artistic orientation	15 <i>44,11%</i>	9 <i>39,13%</i>	11 <i>61,11%</i>	8 <i>61,53%</i>	6 <i>60%</i>	49 <i>50%</i>
e) Secondary vocational school with no focus on artistic orientation	8	5	3	1	2	19

Source: Own arrangements, 2020

Points d) and e) of Table No.1 are provided with additional information about secondary school's specialization (the figure shows the number of graduates):

1st year Bc. 2019/2020 - Teacher Training in Early childhood education and Tutoring 5, Hotel Academy 1, Business Academy 1, Secondary Medical School 1, Promotional Graphics 4, Graphic Design 3, Advertising 2, Furniture and Interior Design 2, Digital Media Graphics 1, Unspecified artistic orientation 3.

1st year Bc. 2018/2019 - Teacher Training in Early childhood education and Tutoring 2, Secondary School of Veterinary Medicine - Cynology 1, Secondary School of Civil Engineering 1, Economics and Tourism 1, Promotional Art 1, Graphic Design 4, Restoration of Old Books and Print 1, Photographic Design 1, Digital Media Graphic Designer 1, Unspecified artistic orientation 1.

2nd year Bc. 2018/2019 - Pedagogical Academy 1, Secondary Medical School 1, Management of regional tourism 1, Promotional Graphics 3, Graphic Design 1, Design and shaping

of wood 1, Photographic Design 2, Applied arts painting 1, Unspecified 3.

3rd year Bc. 2018/2019 - Secondary Vocational school - hair cosmetics, hairdressing 1, Promotional art 2, Promotional graphics 1, Photographic Design 2, Graphic and Spatial design 2, Advertising Creation 1.

1st year MA 2018/2019 - Teacher Training in Early childhood education and Tutoring 2, Promotional Graphics 3, Promotional Art 2, Unspecified artistic orientation 1.

Our first hypothesis followed the level of digital competencies in various years of university study based on self-assessment assuming that respondents - senior students will evaluate level of their ICT skills as good and excellent percentually higher than junior students. The results in quantitative form are presented in Table No. 2. Our first hypothesis was supported by our research and the results brought several interesting findings. In terms of percentage, the most respondents evaluating their ICT skills as good are in the group of 3rd year students of Bc. degree and 1st year of MA degree. However, it is surprising that not a single respondent from the group of 1st year of MA degree students evaluates their ICT skills as excellent. By contrast 2 out of 10 think, their ICT skills are at beginner's level. Most respondents evaluating their ICT skills as excellent are in the group of 3rd year students of Bc. degree. We were also surprised by the high percentage of respondents who in the 1st and 2nd year of Bc. degree evaluated their level of ICT skills as beginners. 1 respondent in the 1st year of Bc. degree even stated that he does not master work on the computer at all. Current results of self-assessed ICT skills of our students were compared with the results of our research carried out with students - future teachers of fine arts in combination in the academic year 2012/2013. Results are presented in Table No. 3. In terms of percentage those who assessed their ICT skills as good in 2013 in the group of all respondents is identical with the result from 2019. In 2019, compared to 2013, the percentage of those who evaluated their ICT skills as excellent was significantly lower, but on the contrary, the percentage of those who evaluated their ICT skills as beginners increased. These results, however, correspond with the findings presented by Vešić in his publication *Digital Literacy in Slovakia 2020*, in the chapter called "Adapting to modern ICT - the situation is getting more complicated" (Vešić, 2020, p. 5).

The second hypothesis followed the control of basic word and spreadsheet processors, presentation programs. We assumed that in the group of all respondents will be more of those declaring their skills and experience with basic word and spreadsheet processors, presentation programs than those not declaring such skills. Our hypothesis was supported by our research. As many as 96.94% of all respondents declared control of Microsoft Office (Word, Excel), in the group of the 1st year also in the 3rd year of Bc. degree of the academic year 2018/2019 it was 100% respondents. Microsoft Office PowerPoint presentation program was mastered by fewer respondents, but it was pleasing to find out that the percentage of respondents who master work with this program is in the 3rd year of Bc. degree and 1st year. of MA degree higher than in lower years (see Table 6).

Table 2: Respondents' level of ICT skills according to their self-assessment (questionnaire's item No. 5)

Respondents' level of ICT skills according to their own self-assessment	1. Year Bc. 2019 / 2020	1. Year Bc. 2018 / 2019	2. Year Bc. 2018 / 2019	3. Year Bc. 2018 / 2019	1. Year MA 2018/ 2019	Altogether
	34 R	23 R	18 R	13 R	10 R	98 R
a) PC work – beginner	8 23,52%	1 4,34%	4 22,22%	0	2 20%	15 15,32%

ginner level						
b) I have good PC skills	21 61,76%	17 73,91%	12 66,66%	10 76,92%	8 80%	68 69,38%
c) I have excellent PC skills	4 11,76%	5 21,73%	2 11,11%	3 23,07%	0	14 14,28%
d) I do not know how to use PC but I would like to.	1 2,94%	0	0	0	0	1 1,02%
e) I do not know how to use PC and I do not mind	0	0	0	0	0	0

Source: Own arrangements, 2020

Table 3: Results of a survey from 2013 with an overview of students' level of ICT skills according to their self-assessment

Students ICT skills according to their own self-assessment	1. Year Bc.	2. Year Bc.	3. Year Bc.	1. Year Mgr.	Altogether
a) PC work – beginner level	2 4,5%	2 6,1%	2 5,6%	4 19%	10 7,5%
b) I have good PC skills	31 70,5%	17 51,5%	32 88,9%	13 62%	93 69,4%
c) I have excellent PC skills	11 25%	14 42,4%	2 5,5%	4 19%	31 23,1%
Altogether	44	33	36	21	134

Source: Réčka, 2013, p. 85.

Table 4: Method of acquiring digital skills according to students' own opinion (questionnaire's item No. 6)

Method of acquiring digital skills according to students' own opinion	1. Year Bc. 2019/20 20	1. Year Bc. 2018/ 2019	2. Year Bc. 2018/ 2019	3. Year Bc. 2018/ 2019	1. Year Mgr. 2018/ 2019	Altogether
	34 R	23 R	18 R	13 R	10 R	98 R
a) digitals skills acquired during secondary or university studies	28	21	15	11	9	84
b) I took a course focused on PC work	1	0	0	0	0	1
c) digitals skills acquired at work as a part of working process	2	1	0	3	1	7
d) digitals skills acquired thanks to professional help of	14	12	7	3	5	41

family, friends						
e) Self-taught through literature and PC practice	16	10	9	10	2	47

Source: Own arrangements, 2020

The third hypothesis followed the experience and skills of respondents with software relevant within the preparation for the future profession of art teachers which we strive to apply during undergraduate preparation in our educational process. We assumed that the respondents - senior students will to a greater extent declare control of text or bitmap editors, presentation and graphic programs than respondents - junior students. Our hypothesis was supported by our research. It was gratifying to find out percentual distribution of "forces" according to the year of study in point c) Table No. 6 containing proprietary and free software, which we consider adequate in our educational practice (see Tab. No. 6).

Table 5: Application of ICT, specifically PC in the framework of students' education (questionnaire's item No. 7)

Applica-tion of ICT speci-fically PC in the frame-work of students' education	1. Year Bc. 2019/2020	1. Year Bc. 2018/2019	2. Year Bc. 2018/2019	3. Year Bc. 2018/2019	1. Year MA 2018/2019	Al-to-gether
	34 R	23 R	18 R	13 R	10 R	98 R
a) The PC is my essential ICT tool in education, I use it every day to write seminar work, create graphic designs, edit photos, etc	17	13	10	9	7	56
b) I do not use PC every day, only when it is necessary	16	9	8	4	3	40
c) if AIS would not be implemented at university neither PC nor ICT would be needed for my education	1	1	0	0	0	2

Source: Own arrangements, 2020

Our fourth hypothesis followed the respondents' experience with available software assuming the range of proprietary or free software currently available on the market, specified by respondents having experience with, will be wider with senior students than the junior ones. Our hypothesis was not supported by our research, on the contrary, most software, except the ones specified in our questionnaire, were stated by students of the 1st year of Bc. degree. Respondents, especially in the group of students of the 1st year of Bc. degree in the academic year 2019/2020 in an item f) specified a number of proprietary and freely distributable software they master listed in alphabetical order: Adobe Animate, Adobe Premier, CAD, Clip Studio Paint, Corel Painter, FireAlpaca, Hores, Krita, Omega, Paint Tool SAI, Sculpttris, SketchBook, SketchUp, Rebelle, TV Paint, Zoner Callisto. Among which are software developed for areas our respondents might not need in their future profession as art teachers (eg. CAD for technical departments, Omega accounting program or Hores hotel management system, SketchUp for

architects and designers), but it is satisfying to know, that several of our respondents acquired digital competencies related to their professional orientation during their secondary school studies.

Respondents of the 1st year of bachelor's degree in the academic year 2018/2019 in an item f) stated the following software: Adobe Flash, Krita, Lumion, Rebelle 3, Rhinoceros, SketchUp. Respondents of the 2nd year of bachelor's degree in the academic year 2018/2019 in an item f) stated the following software: Krita, Rhinoceros, Zoner Photo Studio, Paint.NET, Pixlr, piZap. Respondents of the 3rd year of bachelor's degree in the academic year 2018/2019 in an item f) stated the following software: Adobe After Effects, Adobe Photoshop Lightroom, LibreOffice Krita, Rebelle, 3D Studio Blender.

Respondents of the 1st year of master's degree in the academic year 2018/2019 in an item f) stated the following software or applications: CAD systems, digiCamControl, Microsoft Sketchpad, Picassa, Rhinoceros.

Table 6: Computer skills, control of text or bitmap editors, presentation and graphic programs according to students' own expression (questionnaire's item No. 8)

Computer skills, control of text or bitmap editors, presentation and graphic programs according to students' own expression	1. Year Bc. 2019/2020	1. Year Bc. 2018/2019	2. Year Bc. 2018/2019	3. Year Bc. 2018/2019	1. Year MA 2018/2019	Al-to-gether
	34 R	23 R	18 R	13 R	10 R	98R
a)Microsoft Office Word, Open Office Writer, Excel	33 97,05%	23 100%	17 94,44%	13 100%	9 90%	95 96,94%
b)OpenOffice Imp-ress, Microsoft Office Power-Point	20 58,82%	18 78,26%	10 55,55%	12 92,30%	7 70%	68 69,39%
c)Ado-be Photo-shop, Gimp, Paint. Net, Corel Photo-Paint, Revela-tion Natural Art, Artwea-ver	12 35,30%	13 56,52%	9 50%	11 84,61%	7 70%	52 53,06%
d)Al-chemy, My-paint, Twistedbrush Pro Studio, Dog-waffle, GimpPainter	0	2 8,7%	1 5,55%	1 7,7%	0	4 4,08%
e)Ink-scape, Adobe Illustra-tor, Adobe InDe-sign, Corel-Draw	6 17,65%	9 39,13%	8 44,44%	5 38,46%	6 60%	34 34,7%
f)other, state:	18 52,94%	4 17,39%	6 33,33%	7 53,85%	2 20%	37 37,8%

Source: Own arrangements, 2020

Table 7: Application of ICT (especially PC) by respondents in their free time or at work (questionnaire's item No. 9)

Application of ICT (especially PC) by respondents in their free time or at work	1. Year Bc. 2019 / 2020	1. Year Bc. 2018 / 2019	2. Year Bc. 2018/ 2019	3. Year Bc. 2018/ 2019	1. Year MA 2018 / 2019	Al-together 98 R
a) PC is my necessarily working tool (Word, Excel etc.)	23	21	11	11	10	76
b) In addition to image browsers and virtual galleries, the websites of some galleries also offer various interactive create-ve art activities I also have experience with.	29	21	13	12	9	84
c) I use PC for leisure and cultural activities (eg targeted search of information on Wikipedia, web lexicons, browsing of works of art in virtual galleries, etc.).	27	20	14	13	10	84
d) I use PC for archiving family photos and editing	24	19	14	12	7	76
e) I use PC for obtaining important information (departures of public transports, cinema screenings, theatre performances, news, weather, etc.)	21	16	15	11	10	73

f) I use ICT for online shopping	23	17	14	10	7	71
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Source: Own arrangements, 2020

Respondents, especially in the group of students of the 1st year of bachelor's degree in the academic year 2019/2020 in an item b) specified several applications and platforms they use to communicate with family and friends or photo sharing listed in alphabetical order: Discord, Instagram, Messenger, Pinterest, Snapchat, Viber. In addition to the listed applications in other groups of respondents other applications were specified: Tumblr, WhatsApp. It was an interesting find that none of 98 respondents mentioned the usage of micro blogging social network Twitter to communicate with family and friends, but on the other hand it is mainly popular in the USA.

Table 8: Activities or experience in the field of art education or creative activity using ICT (questionnaire's item No. 10)

Activities or experience in the field of art education or creative activity using ICT	1. Year Bc. 2019 / 2020	1. Year Bc. 2018 / 2019	2. Year Bc. 2018 / 2019	3. Year Bc. 2018 / 2019	1. Year MA 2018 / 2019	Al-together 98R
a) I regularly visit internet / web sites of galleries and museums, offering various forms of art education or virtual tour of collections	4	4	6	2	5	21
b) In addition to image browsers and virtual galleries, the websites of some galleries also offer various interactive create-ve art activities I also have experience with.	1	0	0	0	1	2
c) I have only little experience with virtual galleries and museums	14	12	9	8	1	44
d) I do not have any	11	4	2	2	3	22

experience with galleries and museums websites, I am not used to visiting virtual galleries and museums. I have not tried it yet and do not know how to						
e) I do not have any experience with the websites of galleries and museums, I do not visit virtual galleries and museums as I do not like admiring art through internet, I prefer going to museums in person.	10	4	0	2	0	16
f) I have experience in the field of digital art thanks to freely distributable painting and drawing programs (give examples)	7	9	4	3	2	25

Source: Own arrangements, 2020

Additional information to Table No. 8: Respondents who indicated in an item 9 an option a) specified the following institutions or platforms: 1st year of bachelor's degree 2019/2020: Slovak National Gallery, Slovak National Museum, Academy of Fine Arts.

1st year of bachelor's degree 2018/2019: Online Art Gallery Ateliér Hlavina, Rijksmuseum, Tate, Web of Arts, WikiArt, Jerry Saltz on Instagram, 1340 ART Magazine.

2nd year of bachelor's degree 2018/2019: Flickr, Facebook of Lucia Dovičáková, Sreetart, Web of Art, 500px.

3rd year of bachelor's degree 2018/2019: Albertina Museum, Andy Warhol Museum of Modern Art in Medzilaborce, GOAP / Central Gallery in Prague, Nitra Gallery.

1st year of master's degree 2018/2019: Artlist, Artsy, Bibiana, British Museum, Google Art, Museu Nacional d'Art de

Catalunya, Nitra Gallery, Slovak National Gallery, Web Art, Wiki Art.

We have to note, that the number of 21 respondents who indicated an option b) is relatively small compared to the total number of 98 respondents, but at the same time students declaring regular visits to internet/web galleries and museums offering various forms of art education or virtual tours of art collections, have a good knowledge and visit websites with valuable content beneficial for their professional development.

We were interested in correlations between self-assessment of ICT skills and the answers to other items, especially the way of acquiring such skills and concretization of controlled text or bitmap editors, or presentation and graphic programs within respondents who rated their ICT skills as excellent and vice versa as beginners or being completely absent.

Firstly we analyze a group of respondents rating their ICT skills as excellent.

In the 1st year of Bc. studies in the academic year 2019/2020, out of 34 respondents 4 stated having excellent ICT skills.

Respondent 1Bc4 a man from Nitra region, studying Teaching of Fine Arts in combination with English language and literature, graduate of a secondary vocational school with a focus on promotional graphics, stated in an item 6 having acquired his ICT skills during secondary school and university studies and also stated being self-taught. In an item 7 he indicated an option a). Spectrum of programs he masters according to his evaluation is wide, he marked Microsoft Office Word, Microsoft Office PowerPoint, Adobe Photoshop, Paint.net, Corel Photo-Paint, Adobe InDesign, CorelDraw, in an item f) he listed proprietary software Corel Painter Essentials and TV Paint Animation. In an item 9 he marked options a), b), c), and e), in an item 10 he chose an option c) declaring having very little experience with visits to virtual galleries and museums.

Respondent 1Bc17 a woman from Nitra region, studying the same study program as respondent 1Bc4, Four-year Grammar school graduate, marked only an option e) in an item 6, an option a) in an item 7. However, in other items her answers unconvincingly confirm having excellent ICT skills. In an item 8 she marked only an option a) containing Microsoft Office Word processors, Open Office Writer and Excel spreadsheets, she did not use an option of any preference, neither did she give examples in an option f). In an item 9, she indicated all the options. In an item 10 she decided to indicate an option e).

Respondent 1Bc18 a woman from Košice region, studying Teaching of Fine Arts in combination with Aesthetics, Secondary pedagogical school graduate with the focus on Early childhood education and Tutoring, marked in an item 6 options a), d) and e), declaring having mastered her ICT skills in addition to secondary, university studies and self-study also thanks to the professional help of her family, relatives and friends. In an item 7 she marked an option a). This respondent is also disputable in regard to her self-assessment stating her ICT skills as excellent as in an item 8 she marked options a) and b) basic word processors, spreadsheets and presentation programs, likewise the respondent 1Bc17, she did not give examples of any other software in an item f). In an item 9 she marked all the options. In an item 10 she decided to mark options d) and e), which from the point of view of self-assessment, current study program and application of ICT in her leisure time or at work was a surprising find.

Respondent 1Bc29 a woman living permanently in Serbia, studying Teaching of Fine Arts in combination with Psychology, Secondary school graduate with a focus on Graphic design, marked options a), d) and e) in an item 6, declaring having mastered her ICT skills in addition to secondary, university studies and self-study also thanks to the professional help of her family, relatives and friends. In an item 7 she marked an option a). In an item 8, she circled all the options except d) and used an

option to underline appropriate answers marking Microsoft Office Word, Excel, Microsoft Office PowerPoint, Adobe Photoshop, Adobe Illustrator, Corel Draw and in an item f) mentioned animation program Adobe Animate. In an item 9 she circled all the options except f) and in an item 10 she decided to mark an option e).

In the 1st year of Bc. degree in the academic year 2018/2019 out of the total number of 23 respondents, five stated having excellent ICT skills.

Respondent a1Bc3 a woman from Nitra region, studying Teaching of Fine Arts in combination with Mathematics, Eight-year Grammar school graduate, marked in an item 6 options a), d) and e) declaring having mastered her ICT skills in addition to secondary, university studies and self-study also thanks to the professional help of her family, relatives and friends. In an item 7 she marked an option a). In an item 8, she marked an option a), b), c) and e) and in the group of listed software she underlined only Adobe Photoshop and Gimp. As one of the few respondents declaring not using ICT to communicate with family and friends neither through social networks nor via e-mail, this respondent did not mark in an item 9 options b) or e) meaning she uses her ICT skills only in the field of education and work. In an item 10 she marked options c), e) and f) having experience with freely distributable software Gimp and Inkscape.

Respondent a1Bc7, a woman from Nitra region, studying Teaching of Fine Arts in combination with English language and literature, Secondary Industrial School of Civil Engineering graduate, stated having acquired her ICT skills during secondary and university studies and being self-taught. In an item 7 she marked an option a). In an item 8 except an option d), she marked all the other options without underlining any preferred ones, in an option f) she marked mastery of 3D computer programs popular among designers, engineers and architects: SketchUp, Lumion and Rhinoceros, likely related to her professional focus and experience at secondary school. In an item 9 she marked all the options except an option d). As one of the few respondents in an item 10, she marked an option a) and stated regular visits to Web Arts portal (available on Internet: <https://www.webumenia.sk/>). It is an online catalogue of works of art from different collections of Slovak galleries registered in the Central Register of Works of Fine Arts, created and managed by the platform of the Slovak National Gallery - *lab.SNG*, exploring the possibilities of using digital technologies in gallery and museum practice. The respondent also mentioned a regular visits to Dutch museum Rijksmuseum web portal, which in 2015 launched a series of online catalogues of collections within the project of Early Netherlandish Paintings (available on the Internet: <https://www.rijksmuseum.nl/en/research/online-collection-catalogue>).

Respondent a1Bc15 a man from Nitra region, studying Teaching of Fine Arts in combination with English language and literature, Secondary vocational art school with a focus on Graphic design graduate, marked in an item 6 only an option e) claiming having acquired excellent ICT skills as being self-taught. In an item 7 he marked an option a). In an item 8 he marked only the possibility a) controlling the basic word and spreadsheet processors, in other items he used the preference of several programs: Microsoft Office PowerPoint, Adobe Photoshop, Adobe Illustrator, Adobe InDesign. In an item 9 he marked only an option a) and f) meaning not using ICT (especially computer) to communicate with family and friends. In an item 10 he marked an option a) and stated regular visits to non-profit institution Visual Art Encyclopaedia WikiArt, which makes art from all over the world accessible online (available online: <https://www.wikiart.org/en>).

Respondent a1Bc16, a woman from Nitra region studying Teaching of Fine Arts in combination with Psychology, Secondary Vocational School of Transport and Services with a focus on Digital media graphics, marked an item 6 as well as an option 7 a). In an item 8 she did not mark any option as a whole, but almost in every group of options (except point d) she

underlined selected programs: Microsoft Office Word, Microsoft Office PowerPoint, Adobe Photoshop, Adobe Illustrator, Adobe InDesign. In an item f) she listed Adobe Flash Player animation and movie viewing software. In an item 9 she marked all the options including an item c) using ICT for leisure and cultural activities (including viewing works of art in virtual galleries), in an item 10 she decided to mark an item c) having little experience with visiting virtual galleries and museums.

Respondent a1Bc22, a woman from Žilina region, studying Teaching of Fine Arts in combination with Pedagogy, Secondary vocational art school with focus on Graphic design graduate, declared having acquired her ICT skills during secondary and university studies and by being self-taught. In an item 7 she marked an option a). In an item 8 she marked options a) and c) as a whole without underlining any program preferences and marked none in point f). Regarding this fact as well as the answers of the following items of our questionnaire we assume that this respondent overestimated her ICT skills rating them excellent. In an item 9 she marked options a), b) and c), in point b) she underlined usage of social networks for communication with family and friends. In an item 10 she decided to mark an item c) having little experience with visiting virtual galleries and museums, although in an item 9 she marked an option c) using ICT for leisure and cultural activities (viewing works of art in virtual galleries included).

In the 2nd year of Bc. degree in the academic year 2018/2019, out of the total number of 18 respondents, two declared having excellent ICT skills.

Respondent 2Bc12 a woman from Žilina Region, declared having acquired her ICT skills during secondary and university studies, in an item 7 she marked an option a). In an item 8 she marked the programs Microsoft Office Word, Excel, Microsoft Office PowerPoint, Adobe Illustrator, and in point f) she stated Czech program for editing and organizing photos for Windows, Zoner Photo Studio. The respondent studies Teaching of Fine Arts in combination with Mathematics and is a Four-year grammar school graduate. In an item 9 she marked all listed options. However, in an item 10 she marked an option d).

The second respondent in the 2nd year 2Bc15 a man from Nitra region, also declared having acquired his ICT skills during secondary and university studies and by being self-taught. Unfortunately, he did not specify the secondary art school he graduated from. The range of programs he marked was relatively small including only: Microsoft Office Word, Adobe Photoshop and Gimp. In an item 8 he did not mark any other options. In an item 9 he marked options b), c), d), f). In an item 10 he marked an option a) and stated regular visits to community photo and video sharing website Flickr and social network for photo sharing 500px. The respondent studies Teaching of Fine Arts in combination with Technology.

In the 3rd year of Bc. degree in the academic year 2018/2019, out of the total number of 13 respondents in this group, three declared having excellent ICT skills.

Respondent 3Bc2 a man from Trenčín region, studying Teaching of Fine Arts in combination with Psychology, Secondary vocational art school with a focus on Promotional graphics graduate, stated having acquired his ICT skills during secondary and university studies and by being self-taught. In an item 7 he marked an option a). In an item eight, he marked options a), b), c) and e) as a whole, in point f) he stated control of Rebelle digital painting software and Adobe After Effects motion graphics and visual effects software. These software enable creative user with advanced ICT skills to create unique works of art. In an item 9 the respondent marked all the options and his ICT skills according to an item 10 of our questionnaire he marked an option a). He also educates himself in the field of theory and history of art by regular visits to gallery and museum websites offering various forms of art education such as: Vienna Albertina Museum, Central Gallery in Prague, Nitra Gallery, Andy Warhol Museum of Modern Art in Medzilaborce. Both

above mentioned Slovak institutions offer various educational activities via their website within the gallery or museum pedagogy. Nitra Gallery has many works from its collection available online via Virtual Gallery (available on Internet: <https://nitrianskagaleriala.sk/publ-cinnost/virtualna-galeria/o-virtualnej-galerii/>) and during an emergency situation due to COVID-19 also created and made accessible online a series of creative activities called Gallery in Your Home (available on Internet: <https://nitrianskagaleriala.sk/vzdelavanie/galeria-u-vas-doma/>).

Respondent 3Bc5 a man from Banská Bystrica region, studying Teaching of Fine Arts in combination with History, Eight-year grammar school graduate, marked only an option e) in an item 6 claiming having acquired his excellent ICT skills by being self-taught. Group of respondents rating their ICT skills as excellent, he was one of the two identifying in an item 7 an option b) stating not using a computer for education every day only when necessary. In an item 8 he marked options a) and b) as a whole without underlining any preferences, in an item f) he listed the following open source software: Krita raster graphics editor, Blender software for modelling and rendering 3D computer graphics, animations and movies using various techniques, and office LibreOffice package. In an item 9 he marked all the options from a) to f). In an item 10 he marked only an option f) gaining experience in digital art via freely distributable painting and drawing programs mentioning Krita software again, professional open source painting program and open Alchemy project focused on exploration of possibilities of digital art especially in the field of creating sketches and drawings.

Respondent 3Bc11 a woman from Trenčín region, studying Teaching of Fine Arts in combination with Pedagogy, Eight-year grammar school graduate, stated having acquired her ICT skills during secondary and university studies, and by being self-taught. From the group of all respondents who rated their ICT skills as excellent, she was one of the two respondents (both 3rd year Bc. degree students) in an item 7 option b) stating not using a computer for education every day only when necessary. In an item 8 she marked points a), b), c) as a whole without any preference of selected software, neither had she specified her skills to any particular software. In an item 9 she marked only options c) and e) putting herself among those not using ICT especially PC to communicate with family and friends. In an item 10 she marked options c) and f) stating the name of commercial graphic program Adobe Photoshop, although the question was related to experience in the field of digital creation via free distributable painting and drawing programs. This fact in the context of her answers significantly reduces reliability of her self-assessed ICT skills as being excellent.

In the group of respondents - students of the 1st year of master's degree none of the respondents evaluated and marked their ICT skills as excellent.

We were also interested in correlations of the answers of those respondents who evaluated their skills as beginners.

In the 1st year of Bc. degree in the academic year 2019/2020 out of the total number of 34 respondents, eight evaluated their ICT skills as beginners.

Respondent 1Bc1 a woman from Nitra region, studying Teaching of Fine Arts in combination with Psychology, Secondary vocational medical school graduate, marked options a) and d) in an item 6 declaring having acquired her ICT skills during secondary and university studies and thanks to the professional help of her family, relatives and friends. In an item 7 she marked an option b). In an item 8 she marked options a) and b) as a whole without any preference of selected programs. In an item 9 she marked options c), d) and f) and in an item 10 marking an option e) she confirmed the consistency of her answers by marking an option a) in an item 5.

Respondent 1Bc6 a woman from Nitra region, studying Teaching of Fine Arts in combination (not stating her

combination), Business academy graduate, marked options d) and e) in an item 6 declaring having acquired her ICT skills thanks to professional help of her family, relatives and friends and also by being self-taught. In an item 7 she marked an option b). In an item 8 she marked an option a) as a whole without any preference. In an item 9 except an option a) she marked all the options and in an item 10 she marked an option a). According to the fact she did not mention any web gallery or museum we consider her answer as unconvincing.

Respondent 1Bc13 a woman from Prešov region, studying Teaching of Fine Arts in combination with Ethics, Secondary art school with a focus on Graphic and Spatial design graduate, marked an option a) in an item 6. As one of the two respondents out of a total number of 98 respondents she marked in an item 7 option c) claiming that if AIS had not been implemented at university she would not need ICT for education at all. In an item 8 she marked an option a) as a whole without any preference. In an item 9 she only marked an option f) claiming using ICT only for online shopping. Marking an option d) in an item 10 is in accordance with other answers. The fact that she studied at the Secondary school with a focus on Graphic and Spatial design calls into question her education as she must have mastered good ICT skills.

Respondent 1Bc20 a woman from Banská Bystrica region, studying Teaching of Fine Arts in combination with Pedagogy, Secondary vocational school graduate with a focus on Furniture and Interior design, marked options a) and d) in an item 6, declaring having acquired her ICT skills during secondary and university studies and thanks to the professional help of her family, relatives and friends. In an item 7 she marked an option a) in an item 8 she also marked an option a) as a whole without any preference for selected software. In an item 9 except for an option e) she marked all the options, in an item b) she underlined Facebook and e-mail as her means of communication. In an item 10 she marked an option c). Likewise the 1Bc13 respondent, the question arises about the application of her ICT skills during secondary school studies. There are currently more freely distributable graphics programs on the market focused on drawing, painting and 3D modelling, suitable for both fields of study which obviously within the secondary education of these two respondents were not applied.

Respondent 1Bc22 a woman from Nitra region, studying Teaching of Fine Arts in combination with Technology, Secondary art school graduate (the respondent did not state her specialization), marked an option a) in an item 6. In an item 7 she marked an option b) declaring not using the computer in education every day, only when necessary. In an item 8 she marked an option a) as a whole without the any preference of selected programs, in an item b) she underlined Microsoft Office PowerPoint. In an option 9 she marked options a) and c) but these answers contradict the previous ones as well as marking an option d) in an item 10.

Respondent 1Bc23 a man from Nitra region, studying Teaching of Fine Arts in combination with Technology, Secondary art school graduate (the respondent did not state his specialization) marked an option a) in an item 6. Likewise the respondent 1Bc22 he marked an option b) in an item 7. In an item 8 he marked options a) b) and e) as a whole without any preference considering his answer unreliable, as computer programs listed in an item e) Inkscape, Adobe Illustrator, Adobe InDesign, CorelDraw require good ICT skills. In an item 9 he marked options d) e) and f). In an item 10 by marking an option c) he declared having little experience with visiting virtual galleries and museums.

Respondent 1Bc25 a woman from Banská Bystrica region, studying Teaching of Fine Arts in combination with Psychology, Secondary art school graduate with a focus on Promotional graphics, marked in an item 6 and 7 an option a). In item 8 she marked options a) b), c) and e) and underlined the following programs: Microsoft Office Word, Microsoft Office PowerPoint, Adobe Photoshop, CorelDraw. In an option f) she added an

application WO Mic - a virtual microphone device. In an item 9 except for an option f) she marked all the options and in an item c) she underlined targeted search for information on Wikipedia. In an item 10 she marked an option d).

Respondent 1Bc30 a woman from Nitra region, studying Teaching of Fine Arts in combination with Psychology, Four-year grammar school graduate, marked in an item 6 an option e) declaring being self-taught. Likewise the other three respondents in this group of ICT beginners in the 1st year of Bc. degree, marked in an item 7 an option b). In an item 8 she marked an option a) as a whole without any preference. In an item 9 she marked options a) and c) but her choice of an answer d) in an item 10 is not entirely in accordance with her choice.

In the 1st year of Bc. degree in the academic year 2018/2019, out of the total number of 23 respondents in this group, only one evaluated her ICT skills as a beginner.

Respondent a1Bc17 a woman from Nitra region, studying Teaching of Fine Arts in combination with Physical education, Four-year grammar school graduate, marked in an item 6 an option a). Likewise the other four respondents in the group of beginners in ICT in the 1st year of Bc. degree in an item 7 she marked an option b). In an item 8 she marked options a) and b) as a whole without any preference to selected programs. In an item 9 except for an option f) she marked all of the options. In an option b) questioning the usage of ICT for communication with family and friends, she added usage of Instagram. In an item 10 she choose an option d) declaring absence of any virtual experience with galleries and museums. In an item f) she declared having experience with freely distributable painting and drawing programs naming "Kryta" and "Rebelle", but the reliability of such statement is questionable as an easily remembered name of a professional open source painting program Krita was spelled incorrectly (assuming she only heard about it) and the painting program Rebelle is not freely distributable software. It is a very successful affordable Slovak commercial product, a unique painting software enabling to create works of art with procedural and final effects of wet and dry techniques (the respondent probably only heard about it).

In the 2nd year of Bc. degree in the academic year 2018/2019, out of the total number of 18 respondents in this group, four respondents evaluated their ICT skills as beginners.

Respondent 2Bc2 a woman from Trnava region, studying Teaching of Fine Arts in combination with Pedagogy, Secondary art school with a focus on Promotional graphics graduate, marked in an item 6 options a), d) and e) declaring having mastered her ICT skills in addition to secondary, university studies and self-study also thanks to the professional help of her family, relatives and friends. In an item 7 she marked an option b). In an item 8 she marked an option a) as a whole without any preference although she had a choice of choosing other software. She listed some of them in an option f) set to specify other programs. She listed Inkscape, CorelDraw and Adobe Photoshop. In an item 9 she marked all of the options. Reliability of her self-assessment reduces an answer to an option f) of an item 10, where she declares having experience with freely distributable painting and drawing programs, but states proprietary CorelDraw software, however, she also added Free Trials.

Respondent 2Bc4 a man from Banská Bystrica region, studying Teaching of Fine Arts in combination with Pedagogy, Secondary art school graduate (he did not state his specialization in the questionnaire) marked in an item 6 an option e) claiming being self-taught. In an item 7 he marked an option a). In an item 8 he marked only an option a) as a whole without any preference. In an item 9 he marked options c), d) and e) in an item 10 by choosing an option c) he declares having little experience with visits to virtual galleries. In an option f) he states having experience with freely distributable software GIMP, Krita and free online photo editor PIXLR.

Respondent 2Bc14 a man from Nitra region, studying Teaching of Fine Arts in combination with Ethics, Four-year grammar school graduate, declared having acquired his ICT skills during secondary and university studies, and by being self-taught. In an item 7 he marked an option b). In an item 8 he did not mark any of the options as a whole, but underlined Microsoft Office Word, Microsoft Office PowerPoint as his preference. In an option f) he stated the name of a logical computer game for one player called Minesweeper. By adding an emoticon he expressed his awareness towards his answer. In an item 9 he marked options d) and f). He impressed us by choosing an option a) in an item 10 by declaring regular visits to website galleries. According to his answers he visits Art Web (we mentioned this platform in connection with respondent a1Bc7 stating excellent ICT skills) Facebook page of a professional painter Lucia Dovičáková and a website of Dutch private initiative Streetart (for more details see www.streetart.com) dealing with mapping and selling (not only) street art but also organizing cultural events, workshops and exhibitions.

Respondent 2Bc16 a woman from Košice region, studying Teaching of Fine Arts in combination with Hungarian language and literature, Four-year grammar school graduate, marked options a) and d) in an item 6, declaring having mastered her ICT skills in addition to secondary, university studies and self-study also thanks to the professional help of her family, relatives and friends. In an item 7 she marked an option a). In an item 8 she marked only an option a) as a whole without any preference. In an item 9 she marked options a), b), c) and f) but in an item 10 by choosing an option c) she declared having little experience with virtual galleries and museums.

In the group of respondents - students of the 3rd year of Bc. degree, none of the respondents evaluated and marked their ICT skills as beginners.

In the 1st year of MA degree in the academic year 2018/2019, out of the total number of 10 respondents in this group, two respondents declared being beginners.

Respondent 1MA6 a woman from Banská Bystrica region, studying Teaching of Fine Arts in combination with English language and literature, Literary private grammar school graduate, marked an option a) in an item 6 and in an item 7 an option b). In an item 8 she did not mark any of the options as a whole, in an option f) she listed Microsoft Office Word and Google's Freeware for managing, cataloguing, editing and viewing Picasa photos and images, which in 2016 discontinued to provide these services and launched a new one called Google Photos. In an item 9 she marked all of the options, in an option c) she underlined targeted search for information and viewing works of art in virtual galleries. In an item 10 she marked an option a) stating regular visits to Art Web site (we wrote about in relation to respondents a1Bc7 having excellent ICT skills) and 2Bc14 (being a beginner), Nitra Gallery website (we wrote about in relation to respondent 3Bc2 having excellent ICT skills) and as the only one out of all 98 respondents stated regular visits to International House of Art website for Children Bibiana (see www.bibiana.sk). It is a cultural institution covering and implementing a wide range of activities focused on art education, including the prestigious international competition exhibiting original illustrations of children's books in "Biennial of Illustrations Bratislava, organized since 1967.

Respondent 1MGr9 a woman from Trnava region, studying Teaching of Fine Arts in combination with Hungarian language and literature, Secondary art school with a focus on Promotional graphics graduate, marked an option a) in an item 6, an option b) in an item 7. In an item 10 she marked options a) and c) as a whole without any preferences. In an item 9 she marked options a), b), c) and e) in an item 10 she marked an option b) as one of two respondents out of 98, but her choice of having experience with web galleries offering virtual tours and various interactive artistic activities without naming even one of them, raises doubts about reliability of her response.

In the group of all 98 respondents, only one assessed her ICT competencies as absent and in an item 5 she marked an option d) claiming not being able to work on PC at all, but would like to master some skills.

It is a respondent 1Bc27 a woman from Košice region, student of the 1st year of Bc. degree studying Teaching of Fine Arts in combination with History, Four-year grammar school graduate. In an item 6 she marked options a) and d) declaring having mastered her ICT skills in addition to secondary, university studies and self-study also thanks to the professional help of her family, relatives and friends. In an item 7 she marked an option a). In an item 8 she marked options a) and c) as a whole without any preference. In an item 9 she marked options b), c), d) and e) but in an item 10 by choosing an option c) she declared having little experience with virtual galleries and museums. We noticed the similarity of her profile with the profile of respondent 2Bc16 in many indicators.

3 Conclusion

Our research investigated the competencies of our students - future teachers of fine arts in the field of digital literacy according to their own self-assessment in relation to expected and anticipated experience and skills acquired during secondary and ongoing university studies at bachelor's and master's degree with an emphasis on experience and skills which are absolutely necessary for the fulfilment of educational goals and content of education within the subjects focused on theory and history of fine arts, the author of this paper teaches at the stated workplace in all grades involved in this research. Students come from different types of secondary schools from different regions having different initial knowledge, experience and skills. The results of our research proved that in relation to the competencies we monitored, the type of secondary school nor the affiliation to the region of permanent residence of our respondents plays a role. The results of our research are a great impulse for us to create such content and forms of education, focused on development of digital competencies in relation to effective application of available ICT with an emphasis on art education. Our goal is to prepare the future teachers of fine arts for an educational practice having adequate competencies for critical thinking on the one hand, and for finding information in the field of art culture and selecting suitable freely distributable software available on the market on the other, nevertheless to acquire all necessary skills during their pregradual training for creative usage of tools offered by such software.

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SELF-REFLECTION IN THE PREPARATION OF THE FUTURE FINE ARTS TEACHERS AS THE KEY STRATEGY OF THE DEVELOPMENT OF STUDENTS' CRITICAL THINKING

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Abstract: The self-reflection of the micro-lesson realized within the didactic disciplines of the study program "Teaching Fine Art in Combination" at the Department of Art and Education of the Faculty of Education of Constantine the Philosopher University in Nitra is an important part of the future teacher training. The student has the possibility to verbally reflect his/her own output immediately after its realization as well as with a time delay in written self-reflection. Structured self-reflection becomes a part of the seminar work, which describes the preparation, demonstrates the motivational presentation and photographically documents the course of the micro-hour. Thus, the students get the tool to learn the key competences of the future teacher through the principles of methodology aimed at their personal development.

Keywords: fine arts education, didactics, critical thinking, self-reflection, micro-lesson

1 Introduction

One of the key competencies of the teacher is undoubtedly the ability to be creative not only in the field of art but also in the field of practical life, the ability to critically perceive surroundings and information, as well as the ability to think critically and evaluate the situation or outcome of his own and others activities. Our pedagogical approach uses both verbal and written self-reflection of students to develop such competencies.

2 Theoretical background

According to Gogolová (2013), experiential learning is aimed at initiating emotional experiences through which one gains experience in meaning of „skill“. These include e.g. outdoor activities, use of all kinds of arts and sports. The activity is not directly focused on learning something. The activities are playful and the game pulls participants to a strong experience through which they learn spontaneously. They also learn from common analysis, post-activity reflection. Reflection (evaluation and generalization), mostly directed by the teacher, transforms the emotional experience into a form of experience that can be used in practice. According to Cimermanová and Straková (2012), micro-education provides space for students to verify in secure environment the selected practices and techniques used in the learning environment. This approach gives students the space to get to know each other as teachers and observe themselves and their colleagues even at the cost of creating a simulated environment. Hupková (2004) believes that the quality of the school can be improved if the emphasis on teacher training is increased, and one of the methods may be the self-reflection of educational activities. Self-reflection includes describing, analyzing, evaluating, ordering, generalizing, refining our educational practice, the ability to manage our own future and professional growth, and increasing the effectiveness of education. It lists the following phases of self-reflection: 1. Start the process. 2. Collection and arrangement of information. 3. Analysis and interpretation in the context of previous experience. 4. Creating a plan for future pedagogical activity. Those principles led us through our teaching strategies.

3 Application of theoretical bases into practice

In the spirit of the concept of experiential learning, the students of the "Teaching Fine Arts in Combination" have tried teaching through the realization of a micro-lesson. Teaching took place in the classroom or in the school areal/exterier, starting with warm-up activity in the form of a game and simple physical or psychical activity, but always in relation to the theme and aim of the lesson. This was followed by a motivational, mostly pictorial

presentation, the assignment of the task, its repetition, explanation of misunderstandings, finally its updating, independent art work, and finally an evaluation. This happens immediately after the micro-lesson as a full-featured part of the lesson and evaluated by both students/teachers and students/pupils. Our students were encouraged to self-evaluation and to solving problems by themselves. Each student stepped in front of the classmates, presented his/her lesson, expressed his/her own opinion and led a discussion. The students had the opportunity to express themselves (both verbally and in writing or visual form) and evaluate the process of the lessons, the atmosphere, the results of the artistic and educational work.



Pictures 1 - 2. Two slides of the presentation for ice-break activity: the students should guess, which insect inspired the jewelry – well chosen task in accordance with the main topic.



Picture 3. The selected slides from the very well made motivational presentation about the secession jewelry, which shows the personal interest of the student in the topic.



Picture 4. Independent work of the students/pupils.



Pictures 5. – 7. The best results of student art work – jewelry inspired by secession style, imitating fly and dragonfly, all made with precision, concentration and passion.

3 Research of critical thinking in the students' self-reflections

Our qualitative research examines a society from the position of a humanitarian paradigm that is interested in the quality of social situations. According to Plichtová (2002), it is important to achieve a useful knowledge of only one environment than to infer the generality which we can apply to the entire population. According to Strauss and Corbin (1999), qualitative research serves to reveal the nature of phenomena, to obtain new information, or to gain new views on known phenomena. Consequently, the researcher may not have a hypothesis. The research takes place in a natural environment (e.g. in a lecture hall) and the research is selected on the basis of a certain concept. According to Jusczyk (2003), qualitative research presents itself in narrative or essayistic form of text and consists in analyzing of phenomena and interpreting a meaning.

The aim of our qualitative research was to identify the elements of critical thinking in the students' self-reflections.

The research sample were the students of „Teaching of Fine Arts in Combination“, namely 7 female students and 1 male student. The time schedule was given by the structure of the academic year. The data were obtained during the exam period at the Department of Creative Arts and Art Education of the Faculty of Education of the CPU in Nitra, according to the current schedule in the winter semester of the school year 2018/2019, processed at the end of July 2019. Thus we obtained text material contained 8 self-reflections as the last part of the written seminar work, which describes the preparation, demonstrates the motivational presentation and photographically documents the course of the micro-lesson (pictures 1. – 10). The structure of the self-reflections was given by the teacher: 1. Description of the lesson; 2. Expectations versus reality; 3. Evaluation: positives and negatives of the lesson; 4. Planning of future pedagogical activity. For the purposes of this paper we analyzed only the second, third and fourth point of reflections. The method of data acquisition was the written text of structured self-reflective pedagogical diary of the students and the method of data processing was its qualitative content analysis. From the possibilities of content analysis we chose three basic methods of work with data: description, analysis and interpretation.

3.1 Self-reflection analysis

According to Janoušek (1986), the result of the analysis of documents should answer the questions: *What does this document represents and what goals were pursued in its creation? What is its context? Who is its author and what conclusions can be drawn about him? What is the credibility and factual content of the document? What is the evaluation*

component of the document and what are the conclusions drawn from it? We will answer these questions.

The 8 students' self-reflections were absed on the instruction of the teacher who wanted to familiarize her students with this method of teacher self-assessment. Students obtained a 4-point self-reflection structure and the range of text was determined from half to one A4 page. The teacher kept in mind that this text could be researched and evaluated, so she was in the position of a researcher, what is welcome in qualitative research, as there could be no distortion of the data inaccuracies in the communication between the researcher and the task submitter. The reflections were made by the students who attended the seminars of the mandatory subject Didactics of Fine Arts Education. The students themselves chose topics from the actual curriculum for fine arts education. The teacher facilitated the process of preparation and realization of the micro-lessons. On the basis of the texts it is possible to draw conclusions regarding the ability of the students to critically perceive, think, evaluate and plan. The credibility of the document is high because the students already know from the last semester that it is safe to express their opinion, even though it is different from the group or the teacher. The classroom atmosphere was relaxed.



Picture 8. The chosen results of the art work in the lesson „Vitrage“ (Sword, Land, Sunset), all were finished after the lesson, during the school break.



Pictures 9. – 10. One slide from presentation describing the medieval pot helmets and the photos from the lesson: preparing the helmet from the paper, completed helmet, photo pose of the student in helmet, made at home, finished after the lesson, led by enthusiasm and strong inner motivation.

3.2 Research results

We used the readable parts of the reflections and corrected some sentences to be more clear, because the students expressed themselves freely, used their real language, with the lack in area of stylistic and grammar. We leave out word wade and repeated information, but still we cared a lot about the real meaning of their expressions, also we did not comment thoughts which were clear enough but we added the comments based on our own observation. We highlighted the parts important for our research

aims and we replaced the words „students, pupils, classmates“ by pronoun „they“ in to avoid confusion.

Student 1, topic Secession

2. Expectations vs. reality

My interpretation and presentation *did not turn out as I expected*. Presenting the new substance was *stressful* and the presentation was *not well prepared*. On the other hand, *their activity and correction were very well managed*. The student work was done *beyond my expectations*. Each created according to their ideas, created many kinds of beetles and each jewel is actually wearable. There were *no complications* during creation.

3. Evaluation - positives and negatives

The presentation I prepared for the students was *too long and I had a great stage fright during the presentation*, which made me *forget some of the information* I wanted to mention. I would *evaluate* them very *positively*. They *actively answered questions* and *worked* continuously throughout the lesson. The lesson was *relaxed* and they were doing *what they should*.

4. Plan for future pedagogical activity

I would simplify and shorten the presentation. During the lesson I would *ask more questions* to them and *divide the activity* of the pupils into two teaching units so that each pupil can complete their work.

We consider as valuable the personal information about her jitters, and the confession that she did not tell everything she should. The reflection is complex, includes good and bad parts in harmony. She could experience all good aspects of her lesson including the great results and she learned from her mistakes.

Student 2, topic Illustration

2. Expectations vs. reality

I was *expecting a little better discipline*. Anyway, I guided them, *the lesson was pleasant* and *the work was adequate to the skills*. I *expected* that since they had more art tools in the classroom, *they would choose more techniques* than drawings and paintings, so the products would be more diverse. However, *they could choose the technique themselves, so it was fine*.

3. Evaluation - positives and negatives

I *appreciate* they all worked *actively* and had a *pleasant atmosphere with many conversations*. I also think they were *interested* in the topic, besides the presentation I brought them a few *books for inspiration*, they had several questions, which *made me very happy*. I consider as *negative the time limit*. They thought about work a lot, they wanted to work as good as possible so they did not rush.

4. Plan for future pedagogical activity

I would *not change anything*, I liked the lesson, they were *happy* with it too, *but I would advise* them in advance to use e.g. water colors that would help them finish the picture and *it wouldn't take as long*.

We see the contradictions in a few moments. She wanted more discipline, but appreciated vivid behaviour, she let them choose the technique, but was not satisfied with the chosen ones, she would not change anything, but still she would do something different. However, the lesson was motivated and led good and the process also results were great. She showed emotional approach to education, emphasizing the positive mood during the lesson, maybe it has some connection with the fact that she is very good and impressive artist.

Student 3, topic Vitrage

2. Expectations vs. reality

I *expected pleasant cooperation* on the lesson, their engagement and also their *good manual skills*. My *expectations have been met*.

3. Evaluation - positives and negatives

I am *glad* that I did not restrict them during their initial activity, because I could see their creative thinking this way. I think it was a very *nice diversification* of the lesson to *watch a video* showing the stained glass production process. It was also seen that *they enjoyed their work* on stained glass windows and some had an *inner motivation* to finish their stained glass *after the lesson*. I see the *negatives* in my *quick talk* and *expectation of a similar level of perception* of stained glass as I have, also in the

fact that I was *not entirely sure* of the answers to the students' questions.

4. Plan for future pedagogical activities

I would shorten a ice-break tangram activity, because one group has put together several solutions to show their creativity, but ultimately prolonged the activity and used the needed time. I *would ask even more questions* about their own experiences with the subject. I *would certainly ask more times* if they understood the different steps of the procedure. Since this work was more time consuming I *would definitely divide it* into 2 lessons. I *would reduce my expectations* of pupils' knowledge and interest, and *would be better prepared* for the lesson in theory.

She sees quite rational way the positives and negatives and finds the reasons and explanations of the processes. She appreciates her own effort and good parts of the lessons, but still she sees her weakness and she knows (decides) how to overcome them. Her personality with strong confidence seeks for the solutions for all difficult situations.

Student 4, topic Perspective

2. Expectations vs. reality

I *expected a pleasant atmosphere* in the classroom, pupil engagement and also *good manual skills*. My *expectations have been met*.

3. Evaluation - positives and negatives

I am glad that they already had an idea what the perspective was during the initial activity. I *think they liked the work and relaxed*. I see the negatives in the fact that I *did not have any activating questions* for many pictures in the presentations.

4. Plan for future pedagogical activities

I *would choose only pictures* for which I would have activating questions and *better examples* in presentation. I would certainly *ask more times* in the future if they understood the assignment of their work. Because this topic was more difficult to implement, I would *reduce my expectations* of their *knowledge and interest*, and *would be better prepared* for the lesson in theory.

He admitted that he was not well prepared in theory, as a few other students. They only chose random information and picked the first few shown pictures from internet, without critical evaluation, because they used to do it that way. They don't doubt internet information and they consider them as the same quality as the information in the science books. We don't say them (and we don't think so) that every book is better than internet, only we let them confuse themselves with contradictory, empty and half information during their presentation and let them learn from their mistakes in the secure environment with acceptance, understanding and humor.

Student 5, topic Medieval

2. Expectations vs. reality

I expected the presentation to be short enough to create, decorate and paint the helmet, but as a result lack of experience, *the presentation was too long and the production took a long time*. At the same time, I *expected that I would be able to better explain the work process* to them, but what I asked them to do was too difficult.

3. Evaluation - positives and negatives

I *positively evaluate the atmosphere* in the lesson, which was also pleasant because of listening to medieval music. Their *interest* during the presentation and production of helmets was also *positive*. I negatively evaluate my presentation. It would be better if I asked the pupils more about their experiences. Also the material for the helmet was not very suitable.

4. Plan for future pedagogical activities

I would consult the historian at school to find out what the pupils know about this topic. In the final evaluation I would like to *highlight especially the effort for the creation* and the actual *design of the helmet*, because this kind of creation is very *difficult* and because everyone had a good feeling of the work result.

She emphasized the common problem of the micro-lessons: the presentation. The micro-lessons taught the students to make the presentation much shorter than they wanted. We could see they repeat their experiences from the schools: the content of

presented content is full of useless, uninteresting information which nobody can use in a real life, in practice. They discover they can do the presentation different and creative, they have only to think what would be interesting for themselves. We consider the work with stereotypes as a very important part in development of critical thinking.

Student 6, topic Video

2. Expectations vs. reality

At the lesson I expected a good atmosphere, active answer of the students to the questions from the presentation and their cooperation. All my expectations have been met.

3. Evaluation - positives and negatives

The lesson was in a relaxed and cheerful atmosphere. They were active and did not disturb the course. I explained the topic and showed videos. But then I began to talk about too much theory and they lost their attention. The pupils worked together and agreed on everything without any problems.

4. Plan for future pedagogical activities

In the future, I would be more involved in the presentation and would ask them more questions about the subject. I would choose more up-to-date images to engage them and encourage conversation.

She talks about another common problem: they use to sit quiet during their university lecture, and it takes a little time to learn how to make the lecture interactive. They are encouraged to ask the pupils about their experiences with any topic, even from the movies or PC games, and to ask them questions about presentation, to keep their attention and build their motivation. They can see how their classmates lose their attention after sixth or seventh slide of presentation, thus they learn by critical thinking how to animate, choose and organize text and pictures.

Student 7, topic Bodyart

2. Expectations vs. reality

I expected a pleasant and relaxed atmosphere in the classroom, active involvement in the teaching process and also their creativity. I can say that my expectations have been met.

3. Evaluation - positives and negatives

I positively evaluate the whole lesson, pupils were active and communicative, immediately answered questions. During their creative activities they showed their creativity and art skills. I consider as negative less time for the activity itself.

4. Plan for future pedagogical activities

In the future, I would focus on explaining more precisely what I expect of them and thus making it easier for them to understand the task. I would also divide this topic into two lessons so they could spend more time for the creative process and for evaluation.

She did not put much effort into the reflection, she talked about common and general facts in education. Although her presentation was not very good, she did not write about it and did not think about any changes. After the state exam showed that she does not want to teach at all, and this lack of interest also lack of critical thinking is visible in her reflection.

Student 8, Sculpture

2. Expectations vs. reality

I expected pleasant cooperation in the lesson, engagement of them and also their good manual skill. My expectations have been met.

3. Evaluation - positives and negatives

I think the class was going according to my wishes. They were active and involved in the topic. They understood terminology I used. I see the negatives in the presentation, it could be more elaborated.

4. Plan for future pedagogical activities

I would give the students more time. I would elaborate the presentation in detail so that the form was more transparent and thus easier to remember. I would have better prepared theoretically.

She had not very high expectations from the lesson thus their fulfillment was not so difficult, plus the classmates were very kind and made what they should, due to the good relationships in the classroom. We can say this type of education makes good

relationships between the classmates in global, because they have an opportunity to know each other through their reactions during the lessons, through the results of their art works, which show their personalities by new way. They learn to help each other and during the art work they use to talk about everyday and sometimes about things important for life. Often they spontaneously start to talk about the mission of a teacher.

3.3 Research Conclusions

To be better prepared theoretically – this wish is repeated and fortunately it can be achieved with some effort. We can tell our students are creative – they can create the original lessons with original artistic thinking, but after the micro-lessons they know that critically selected information is the important base of the education. The second repeated wish was to better explain the task and the artistic process: there were many misunderstandings and uninvited surprises, and all students realized the importance of this part of the lesson.

Four of our students used the same or almost the same two sentences, in meaning „I expected cooperation in the lesson, engagement of them and also their good manual skill. My expectations have been met“. Other parts of reflections were made mostly with different and often personal content. Maybe because they did it the first time, at the start of reflections of their lessons, the students helped to each other but then discovered they can make it without help and they continued individually.

Seven out of eight students critically analyzed their micro-lesson but one student did not take advantage of the self-reflection potential. The examined students compared their expectations with the reality of the lesson, evaluated their output and the approach of their classmates in the pupils' roles, and based on previous thought processes decided to change the approach to planning a future, improved lesson. The students were aware they were gaining experience also through their mistakes.

The research has sufficiently demonstrated the benefit of using a self-reflective pedagogical diary (self-reflection) to acquire new teacher competencies in the student preparation. It can be stated that whether the lesson turned out "good" or "less good" did not affect the beneficial role of the self-reflection. The students themselves saw in their writing that each lesson contained both positives and negatives, and from both they can learn.

4 Recommendations for practice

Based on the results of the research, we have to recommend oral and written self-reflection as an effective tool for acquiring the key competences of the future teachers, especially their ability to think critically, evaluate the course and outcome of the process, as well as thoughtfully and responsibly plan their future teaching. The micro-lesson had also proved to be an effective means of preparing a future teacher. We were able to determine a relatively wide variation in the scope of the diary so that students did not write mechanically just to fill rows. Despite not all students worked completely independently, it did not negatively affect the main meaning of their reflections.

5 Conclusion

Our methodology applied to the didactic disciplines, implies the transfer of acquired experience to students in their future pedagogical practice of teaching fine arts education, and allows them to develop their pupils' creativity and critical thinking. However, these abilities are also developed in other subjects, for example in the theoretical disciplines (Réčka, 2019). Réčka says cognitive and aesthetic knowledge of universal human values presented in art can positively influence the development of cognitive and emotional qualities and can inspire creative and critical thinking. In the above-mentioned ways, the idea of complex art education is fulfilled and thus the personality of student, the future teacher, is naturally developed, which is also the main mission of art education at our department.

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Primary Paper Section: A

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SEVERAL REMARKS ON THE FATE OF THE 20TH CENTURY MINORITY SLOVAK IN THE NOVELS OF PAVOL KONDAČ

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Abstract: The paper is based on a general statement on the importance of minority literature in the background of the opposition center - periphery. It emphasizes the viability of cultural efforts of minorities and mentions the specific conditions and forms of their literary realizations. Emphasis is placed on space-time of the Slovaks in Hungary during the turbulent 20th century. The aim of the paper is to point out the personality of Pavol Kondač (1931-2019), whose direct founding cultural-literary effort is still significant in the life of this national minority. The methodological starting point is the presentation of significant novels by this person: the author of the first Slovak novel in Hungary. In the background of the concretized cultural memory of nationality, he emphasizes his texts, in which he follows the tortuous fate of a simple, but also socially significant Slovak in the given chronotope. He focuses not only on the individual but also on the nationality as a whole. He presents various events, attributes, features and aspects which in one way or another (i.e. complexly) influenced the narrower or broader community in the given coordinates.

Keywords: literature, nationality, Slovaks in Hungary, interpretation, Pavol Kondač

1 Introduction

Literature is wherever a word is written, i.e. text - regardless of whether it originates or acts from the geographical or cultural aspect from out of the center or the periphery. In the background, we can say that: *"Strong and developed literatures, which now function as centers of the world literary system, used to be peripheral in the phase of their emergence; without interference with peripheral productivity and the resources of "small" or "minority" literatures, even central literary systems would stagnate. No cultural system is self-sufficient and free of interference. Centrality and peripherality are thus variables that depend on historical dynamics and system evolution"* (Juvan, 2009, p. 181). That is why it is important to identify and subsequently interpret the cultural "fruits" of smaller, marginal, national literatures. Interpretation is important as a combination of the objective and subjective in the background of complex empiric realities, for example *"interpretation will remain what each literary scholar declares it to be, either by definition and explication or by daily praxis. Experience tells me that every attempt to introduce a rational and explicit theory into literary scholarship as well as any demand to legitimate scholarly work in this domain is immediately refused by a majority of scholars as normative and imperialistic"* (Schmidt, 2000, p. 623). For this reason, the individual approach to the literary text behind the experience complex is important.

Privileges are unforgettable in a person's life. It is no different in the case of the cultural development of nationality, which is always specific, characteristic, distinctive, peculiar. This is also known to the Slovaks in Hungary, whose literary beginnings date back to the period before World War II. It was then especially so-called folk authors, who in one way or another established themselves in the contemporary cultural development. However, we have only witnessed the "mature" presence of the literary "spirit" of the Slovaks in Hungary since the late 1970s, when the cult anthology *Výhonky* [Shoots] (1978) was published. The gradual publication of separate book publications from the beginning of the next decade was a kind of natural continuation of individual creative efforts.

2 Coordinates of the first Slovak novel in Hungary as a solid foundation for further cultural development

In this respect, 1984 was an important milestone in the cultural and literary life of Slovaks in Hungary, when the first Slovak novel of this nationality, entitled *Hrboľatá cesta* [Bumpy Path], was published. Its author was Pavol Kondač, who was born on January 16, 1931 in Szarvas in a peasant family (he died on June 14, 2019). Since 1951 he has been the editor of the magazine

Náša sloboda [Our Freedom], which since 1957 (until today) has been published under the name *Ludové noviny* [People's Journal]. He graduated from Gedelov University of Agriculture (Hungarian Gödöllő, 1968). He was originally an agricultural engineer, but since 1977 he has been the editor-in-chief of *Ludové noviny*. At first he created fiction marginally; he started writing sketches and short stories. On the pages of the magazine he edited (but also in the National Calendar), his texts appeared. We register Kondač's prosaic entry into literature since the publication of the anthology *Shoots* (1978, short stories entitled *Rozvod a Útek* [Divorce and Escape], pp. 111-139), then he published a separate collection of short prose *Onemelá izba* [Speechless Room] (1983), followed by the novels *Hrboľatá cesta* [Bumpy Path] (1984) and *Neskory návrat* [Late return] (1987, reissue 2012). It is interesting to note that Miroslav Demák wrote in *Nový život* [New Life] journal (1979, vol. 31, no. 1, pp. 91-93) that, judging by Kondač's stories in various proceedings and magazines, the author is well on the way to greater separate work - and so it happened.

This actually ends the bibliographic calculation of Kondač's books. (For the author's brief biobibliographic entry see also: Bartalská, 2001, p. 157). His novel works, however, are *"up-to-date artistic testimonies, which are not deprived of their catchiness and their informative value due to their contemporary conditionality. Nationality meets (and intersects) with human universality. It is a prose about human losses and victories"* (Andruška, 2008a, p. 51).

From the point of view of our topic are also interesting those extracts from *Bumpy Path*, which were published in various anthologies and magazines - for example, the following is published in the proceedings of *Zrod* [Birth] called *Matka a syn* [Mother and Son] (1981, No. 1, p. 67-79), in the anthology *Pramene* [Sources] along with five short stories a text (entitled *Bez súhlasu* [Without Consent], 1982, p. 115-132) and an excerpt can also be found in *Speechless Room* entitled *Kameň zahodený* [Stone thrown away] (1983, p. 106-154). In his later publication, *Od septembra do júna* (Čítanie pre slávnostné a iné príležitosti) [From September to June (Reading for Festivals and Other Occasions)], he presents a short story *Iba po tótsky* [Only in Tóť] (1997, p. 68-70), which is also an excerpt from the *Bumpy Path*.

Naturally, this authorial and editorial approach resulted in the *Bumpy Path* emerging in 1984, which provides a sculptural picture of the key moments of the life of Hungary and Slovak nationality in the space of more than half a century from the 1930s to the 1960s, spatially embedded in the Lowland town of Suchá and partly in Budapest. (Of course, the social events mentioned also stemmed from the political situation in 1918...). It is typical that: *"The humanities are instrumental to human development and happiness and are an integral part of our lives. However, a lack of empirical research limits our current understanding of the role the humanities play in the well-being of individuals, communities, and societies"* (Vaziri, Tay, Keith et al, 2019, p. 695). For this reason too, the interpretation of well-known or less contracted literary texts, which extend knowledge about human being and living (for example of the Slovak minority in Hungary), is again important. Therefore, it is still true that such procedures *"highlight the importance of the concept of national literature, which has not lost its role even in the contemporary literary sciences"* (Pokrivcak - Pokrivcakova, 2016, p. 288). Kondač knew exactly *"how to approach a national topic, which events of life to use for the creation of novel reality, in which national fates are literarily significant and so on. That is also why his literary statements are marked by a distinct patina of art"* (Andruška, 2008b, p. 47). At the center of his attention are the fate of wage laborers, especially Paľo Gajdoš Sr., who is hardworking, fatefully reconciled with fate, but he still falls victim to the cruel social situation of the time. The first part of the novel gives the atmosphere of the

contemporary Hungarian environment in the spirit of realistic prose. In the following sections - we could understand them as separate inserts into the central novel storyline, as in their center is not Paľo Gajdoš Sr., but other characters - changing social conditions changes the space for people's activity. Overall they are "vivid and factual memories of the author about the life of the previous generation" (Zrubec, 1986, p. 59). The dramatic, but also amusing events of the delighted family show sentient readers a sculptural picture of the Lowland Slovaks, their habits and nature. He is particularly sensitive to the social circumstances of life, whose nuances are in close ties with the social context of the time. He thus depicts the life and problems of the Slovak minority in Hungary, dwelling not only on the relationship of intelligentsia from its ranks to the other-national environment in which it belongs, but also to its own origin.

In the novel there is an important place for "mutually pervasive plot and reflection parts concerning the issue of nationality, but no less valuable in this book is the fact that he portrays the Slovak element in close coexistence with the Hungarian environment and inhabitants" (Andruška, 2013, p. 49). The author presents himself as the master of the atmosphere, who can reach for details that determine and are that are typical for that period. The text draws the reader's attention to the various human destinies that take turns to co-create the whole.

At the same time, the author was not only concerned with the personally motivated intention of the writer's self-realization, but also with a culture creating act inspired by national awareness and consciousness of a certain social mission. Kondač is an essential epic author and a lively narrator; his nature manifests itself in the fervent struggle for justice and honor. It is therefore obvious that "he has extensive epic funds ... From his expressive positions he is closer to a realistic epic expression, plotted on a good knowledge of the subject matter and subordination of creative fantasy and fabrication readiness to the deep truth of life" (Tomiš, 1985, p. 85).

The harsh reality of the novel (social insecurity, poverty, humiliation of man in his human dignity, violent collectivization, intergenerational and gender conflicts, decay of the patriarchal way of life) is accentuated by appropriate linguistic-stylistic means. These become the defining features of the whole work. It is also interesting to mention the following idea: "The attribute-laden syntactic of the 'bumpy path' generally indicates obstacles to human life. In the context of the novel, this meaning also applies, but it also extends to new contents as it relates specifically to the fate of Slovaks living in the south-eastern part of Hungary. In this sense, the title of the work can also be understood as a metaphor expressing their strenuous journey through life full of obstacles" (Maruzsová Šebová, 2013a, p. 109). This also implies a basic stereotype of the aggrieved Lowlanders as victims of historical events. Characters are depicted most often in this spirit. Female characters of the novel however "remain in a secondary position, as they are in a closed, patriarchal family. They play the role of a mother-wife, whose job is to take care of the household, the family, and bear the burden of life caused by poverty, social, civil and national injustice" (Maruzsová Šebová, 2013b, p. 322). A wide space is therefore devoted to the unfolding of a story whose initiators and bearers are mainly male characters.

Pavol Kondač's novel is a superbly national novel: it is revealed by descriptions of individual parts of Suchá and its surroundings, geographical names and distinctive lexical units of the Lower Slovak dialects. The author was thus able to effectively present the pre-war situation and the fates of the people in it, when the agrarian laborer was bound to the extreme (in) grace of his exploiters. However, Kondač sees not only conflicts arising from social contradictions; he notes that they also arise from the complex, diverse, and contradictory nature of the people. Meditations of a young Slovak journalist Paľo Gajdoš Jr. extend the novel from the past through the present to the future. This part of the work raises almost all the serious problems of Slovak nationality in Hungary (lack of awareness of belonging, fragmentation, lamentation, ignorance of the standard language).

For Lowland Slovaks, however, it is an important novel both in scope and thematic terms - a work with remarkable composition and linguistic layers. In addition, serious historical events, social transformations and crises (rooted in the collapse of the Austro-Hungarian Empire) will come to the attention of a chronologically strictly developing network. While the first part of the novel is dominated by the typical classic ratio of main character and minor characters (nationality – inferiority), in the second part of the work, although it does not lose its central position, it often remains in the background – especially in those cases where details and life sections of the characters. The novel thus becomes in its entirety a "bearer of Slovak national values and identity ... The author is very consciously approaching the question of nationality ... The natural existence of nationality is embedded into objectivity, where the way of life, traditions, customs of the Lowland Slovaks manifest themselves in everyday activities" (Divičanová, 2002, p. 483). On this basis, the identity of the texts and hence the identity of the characters from different aspects "is also necessarily re-interpreted though the new dissemination of literature. For this very reason, in this critical paradigm of the intercultural existence of literature, the concept of literary or cultural transfer has become topical" (Skulj, 2011, p. 291).

3 Traditions, fates and perspectives of man and nationality in the novel *Hrboľatá cesta* [Bumpy Path] (also) in the 20th Century

In the second part of the novel, which takes place after liberation, the atmosphere seems to have gradually disappeared. The writer replaces it with a subjective level, especially with the character world of characters. The natural outer world thus enters the sphere of the conscious inner world.

In the Bumpy Path, the rich means of expression are associated with an adequate vocabulary that aptly typifies the linguistic and communicational habits of the Lowland Slovaks: their openness or inclination to humor and sincerity. The author dives into the dominant literary Slovak language while organically incorporating dialect expressions; uses various book forms and archaic terms. It is therefore challenging to reflect on the status, functions and use of literary proper names in the prose work of Pavol Kondač (For more details: Odaloš, 2008, pp. 297-301). The author of the prototext selects literary names thoughtfully and deliberately occupies onymic dominants and subdominants with a certain semantic type. Literary names that work in everyday life or are a combination of them do not name persons identical to name holders in reality, because they name the author's characters, such as Jano Bakoš, Jano Havran, Mara Havranová, Paľo Kovalčík, Marika Pákozdiová, Katarína Prievarová, Jozef Slivka, Paľo Urban and so on. The presented literary type dominates precisely in this prose work by Pavol Kondač. Proper names in his prose fulfill four functions: identification-differentiation, epic (plot), characterization and national-representative. The epic (plot) function is fulfilled by literary names in the plot in various relational tasks to other characters or realities, for example in this novel Paľo Gajdoš, Jano Komár, Mišo Prievara guarantee the context and provide the narrative framework of relationships. The reflection of the social context of prose in the titles of works in the form of the attributive dimension of linguistic material also suggests the importance of contributing to the self-knowledge of Slovak nationality and minority life in the Hungarian environment in the Lowlands by means of an artistic word.

The idea of the work is put into the center and around it the author organizes all the elements of the epic structure (the course of the self-awareness process of the poor Slovak peasant Paľo Gajdoš Sr.). Compositional, narrative or linguistic-stylistic homogeneity is also subject to this. At the same time, the writer captures the process of transforming two uneducated village youngsters into educated intellectuals and accompanies their external and internal changes that take place in them. Paľo Gajdoš Jr. starts his career as a journalist, while Janko Korbeľ becomes the director of the Slovak school. Kondač thus showed that as an author he is a good observer and a narrator and has the

feeling to describe the details in depicting the life of the characters.

Pavol Kondač had a vital interest in preserving for himself and future generations everything that the Slovaks created in the Hungarian environment, thereby enriching this environment and how it filled them. He portrays the protagonists as some sort creators of regional history. In accordance with the contemporary reality, he emphasizes the relationship of people to the soil as the only certainty. His efforts to capture as much as possible from the nature of breakthrough-laden times is also evident. Creatively he uses not only epic depictions of relationships between people, but also serious movements in society. It is the work of ideological encounters and struggles for truth. Literary critic István Käfer, however, notices the work of Pavol Kondač in a contradictory way, especially the Bumpy Path, whose analysis is trenchantly critical (For more details see Andruška, 2013, p. 63 et seq.). On the other hand (also in defense) it should be added that Slovak on different sides of the Danube had and has different conditions of its development - and thus "*Slovak in the Hungarian diaspora did not have such development possibilities and retained many preserved elements - Kondač: Bumpy Path*" (Magová, 2013, p. 18; it is the idea of Karol Wlachovský, an expert on Slovak culture in Hungary). The question of whether the Lowland writers master the Slovak literary-artistic language is decisive for the existence of national literature and its entry into the context of Slovak literature (Anna Divičanová). However, Viťazoslav Hronec claims that this is not the case - this aspect is not cardinal. However, we are in favor of the opinion of Anna Divičanová, as the literary context as a whole cannot "suffice" only from the dialectical constructional elements of the text. It is a certain specificity, it is "odd", but not enough in itself. That is why the Bumpy Path is important as a symbol of a kind of contamination of the literary and dialectal, old and new, intellectual, peasant, worker and the like.

The first part of the novel describes the life of a group of reapers who find it difficult to work from dawn to night in wheat fields. The area's attribute gives a natural background to the scythes with the rakes, who have to make a living by hard work. The author compensates this miserable way of existence by their direct human character in the difficult thirties of the 20th century. It describes the world of poverty and duty in 1935. It is (in a complex sense) a time of fire and a day without a drop of water on the count's estate. The author portrays the premonition of the workers behind their fears for the future. Certain certainty is symbolized by the scythe, which is a mystified breadwinner. The combination of nature and the landless people thus creates a simple, yet an effective arc of existence from the reader's perspective. The central character of the novel is Paľo Gajdoš Sr. - a brave and reliable father of four children, who concretises his ambivalent relationship to the manor by gaining at least slightly better conditions for his wards-colaborators. The gradual cruelty and covetousness of the "superior" leads to the realization that the farmer can never trust them. The author describes "subjects" as tenacious people who work for the vision of low earnings and their own country. Soil is holy in this society, for it creates certainty: it gives bread to both children and adults. The deteriorating conditions and the amount of work, however, are the roots of the dissatisfaction of the workers who have to bear the bad contemporary politics themselves every day. They are actually great-grandchildren of Juraj Dóža who are not afraid of cane. In the text, the binary opposition of home and abroad is expressed in the background. The antagonism of the hopeless home and the pauperly abroad is emphasized. The severe economic crisis of the era and its intervention in the lives of the inhabitants of Suchá is described effectively from the reader's perspective. However, they do not hear people crying at the Evangelical Church; it is a world upside down, nationally strained. Gajdoš, as a local (symbolic) peasant leader, is a thorn in the eye of a local power who seeks to physically and mentally undermine a false testimony (especially about the Communists). But Gajdoš is firm, distinctive; favorite in his group of reapers. Lawfulness in the state is like life in front of and behind the mirror. The overall order in the country is therefore highly subjective. Hungarian civil servants are standing by to protect

the political establishment, while they offend poor Slovak workers: "*what would be wrong here, if we allowed you to organize against state power, if we suffered that some individuals here would be politically grouping against us and spreading cross-crumbling communist leaflets where they would attack ... Damn crap! Lousy villains!*" (Kondač, 1984, pp. 17-18). Pain of the soul in these cases hurts more than physical punishment. However, the author also describes it effectively with a strong focus on the social aspect.

In contrast, Kondač points to the luxurious life of the proprietors in the mansion: their destruction or wandering abroad. They are characterized by a saturated way of life (created by operettas and brass band) from the time of the Austro-Hungarian monarchy. However, they live an empty life and do not even notice their social or natural surroundings. Yet, to some extent, simple people value them; in their eyes they are enlightened masters. However, this state is only sustainable until the unwritten rule is broken in one direction. "Subject" consider lying to be worse than total contempt. However, as a tame lamb, he has to resist from time to time against such a count who "*from the boredom above the clouds drinks a whole seventh of cognac between the Lower Land and Vienna*" (Kondač, 1984, p. 27). The peasant is symbolized by sweat and Earl caricature (i.e. whip with short hand). Only a Lowlandish summer night symbolically brings some comfort. In this chronotope days are action, but also associated with frequent silence. Days are (nevertheless) dynamic, bearing the foundations of an ideological clash. It escalates at a meeting of Paľo Gajdoš Sr. and Count Tiszahadházy in the forest. This space-time should be characterized by security and a sense of safety. It witnesses the sudden escalation of ancient wrongs and iniquities. Unintentional death brings with it an avalanche of events from the aspect of a poor person who must take responsibility for the death he did not blame. Soil is a great master, for whom it is worth going to jail for several years. From the reader's point of view, though, the ideas of the main character who "*longed to become his own master, a landlord on his own land. For a fraction of a second, he saw himself mowing on his own wheat field*" (Kondač, 1984, p. 41). The trial in Szeged is supported by the encouraging words of the International and the images of the workers' movement (Rákosi, Karikás, Kilián). Kondač puts Gajdoš's fate in parallel with the process of 120 peasants - members of the forbidden Communist Party, who (according to indictment) were initiators and leaders of the organization aimed at forcibly establishing the exclusive dominion of the proletarian social class. The author's vision, however, is slightly one-sided, rising from the contemporary situation. It is surrounded by a symbolic winter, which bites like a rabid dog and vines like a hungry wolf. However, it is important that people bring an example and encouragement to the Lowland wastelands with their shacks. The author emphasizes the unwritten ancient laws of the surroundings, where everything has its exact purpose. The metaphorical place is the rocker well, which hides not only life-giving water, but also the poor body of the suicidal woman due to the "second state" of the count.

A certain culmination of social psychosis is the description of a public hearing by Paľo Gajdoš Sr. during which the dead silence of condolences and compassionate pain is contaminated with skepticism. The author points out the diversity of people who desire not only sensation but also justice. Gajdoš spent his five years in prison reflecting, which is a sign of a certain psychological development. His initial naivety, however, is typical of peasants in contemporary Hungary. The vision of a better life fails in the upstart reaction of the count, who fails to keep his promise and will go far beyond Gajdoš. As a symbol of omnipotence and grobianism, the mansion confronts the poor world of huts. Witness is the dead shoulder of Kereš, which attracts to itself by its harmony. However, it is not possible to make a living, and therefore in the winter, the cottagers must become woodcutters in cane forests. The forest, as a symbol of not only loneliness, but also of encounters, brings darkness both inside and out. However, revenge is gradually reduced, as Gajdoš does not kill the count, but only causes him a fracture of the skull with severe concussion. Escape from one's own

conscience is effectively presented by a description of the natural scenery. However, the black peasant slipper is a clue that determines the social status of a poor person. Purgatory is water, which for a time washes all traces. But Gajdoš's escape is futile - not only court but also cruel politics catch him...

The gradual liberation of the Lowlands is tied to the war years. These are often determined by political prisoners (for example, in the Star Prison of Szeged). Here, too, the author emphasizes the positive characters of the Communists, who have new ideas about the world and gradually endure the prolongation of their pre-trial detention. Their revolt against the current establishment (for example in the years 1937-1939) brought to the surface 100 to 150 indictments. In parallel, Kondač describes the social spirit of the time, the torture and the interrogation of the accused, and Paľo Gajdoš, older than the alleged murderer of count Tiszahadházy, is a direct continuation of this (even historical) political revenge. Everybody is determined, they come together in secret and "foment" even behind bars. There is also mention of the mother tongue, and only "convicts" understand "tót" language ... the almighty ruler regent Miklós Horthy is also mentioned. Poverty stands against him with a united will. At the same time, the strikes of the wage-earners have been described. Once again, the importance of land ownership is emerging, which should belong to the one who cultivates it. However, land reform is an ideal. A simple person must gradually understand the cruelty of the times. Interesting is the mental transformation of Paľo Gajdoš himself from this aspect. His mental ripening is concretized in such a way that he does not mentally confuse himself, seek connections and put his perceptions in order. His gradually developing mental loneliness in prison is also reduced by knowing that he is not ideologically alone. In this way, poverty is actually united and brought together under a common banner. Gradually, hatred of landlords and the idea of revolutionary struggle against them are scattered in prison. The idea of Slavic reciprocity and a kind of thoughtful connection of the Slovaks with the Russians will prevail. They are brothers-liberators, for whom the poor Slovak in Hungary has been waiting for twenty years. Kulaks must be dismissed, because only in this way can the revolution (as expressed in Moscow ...) prevail.

Suchá is described as the centerpiece of military maneuvers. However, the surrounding world of shepherds is gradually changing thanks to American bombers. This period of 1944 brings a cruel toll in the life of the village: the evacuation of the Jewish school and the synagogue and the creation of a ghetto. The author gradually describes the inhumanity of some people who worry more about a dead horse than a living person. It is a time of a symbolic malaria of fear during the fall of black rain not only at Piave, but also at Pest, Szolnok or Suchá. When it comes to bombing, it is interesting, and perhaps even natural, that the lexic and stylistic figures of the characters become more severe: *"The big mistake was that we were poor, but also that we were Tots. – You mean Slovaks, right? Have you also started to use the Tót word? - What else should I use, goddamn? I got used to it. Everybody says that ... What do you have on your school report? Does he speak Hungarian? Yes. Besides that, what other language does he speak? Tót! But that was no longer asked on the school report is whether you were Hungarian or Slovak. Who would care as long as you say out loud that I am Hungarian and I was born to be one, I live in Hungary and I eat Hungarian bread"* (Kondač, 1984, p. 80). The culmination of psychological pressure on the inhabitants is the message of the approaching front of war, which means free looting. A certain starting point, however, is the tireless work on one's own land, which, fortunately, is not subdivided in Suchá; indeed, efforts are made to preserve its integrity through marriages. The description of the fleeing - soldiers-fascists - is almost comical, while the expectation of a new order (i.e. Russian soldiers in the village) is almost idealistic. The news was updated by the broadcast of Moscow radio, but certainty came from the east - from Békéscsaba. The occupation of Suchá by the Soviet army brought the desired peace and new life impulses. Stalin's candles were gradually reduced, and the idea of whom and what was possible to save came to the surface. This is the period during

which: *"People want to live. Even in these unsightly, endless, killing plains. Ringing fills their hearts with hope"* (Kondač, 1984, p. 91). The symbolic death of count Tiszahadházy and the restored free life of Paľo Gajdoš Sr. stand in a kind of symbolic contrast. Thus and then the life of the individual - and thus of the micro-society - starts to move. The author reports the need for everyday hard work. It is a time of proper humility, but also of fear of the present and fear of tomorrow. However, the Soviet military commander of Suchá is described empathically, seeking a common way to improve the village, but also the war-torn living. Brave inhabitants understand the times and understand the arrival of new life. Different times require docile people who are able to organize the whole village in a new social situation. It is interesting to observe the thoughts of Paľo Gajdoš Sr., who unwillingly stands in the middle of events. It combines ideal and real, individual and social: *"Well now perhaps everything will turn to good. In the meantime, you need to relax. Hide from the world. Enough of it was enough. Relax a little, gain strength and then just live and work, as before"* (Kondač, 1984, p. 101). Even nature itself provides adequate scenery for the coming calm, to which Paľo Gajdoš Sr. is also humble (he picks up his hat before the silent morning). Perhaps only in peace comes a new, better, more hopeful life. This is growing by gradual occupation of territories by the troops. In Suchá a commission for soil division is created, but it is a nest of malice. Highlighted are those servants, cottagers, day laborers, who *"were always digging through the land, but never through their own. Only they can represent the will of poverty. Only such a person can and may make a fair decision, having felt the thousand-year-old burning of hunger on the soil on their own skin"* (Kondač, 1984, p. 107). The author effectively describes the external and internal transformation of the village in which the voice of history was heard. Time has returned to the old exact tracks, and the comparison (and outcome) of the two world wars was relentless. The stamp system for important and necessary raw materials was gradually replaced by normal life. However, it was important to guard the tangible and intangible property of the villagers, pulling in one direction for a common goal. The effective part on the decision to allocate land to Paľo Gajdoš Sr. gives a mirror not only of the times but also of human characters. After all, he had no land at all, a sign of the post-war ruling class inconsistency. There is also a variant of magical realism in the text. But where is his work?

Gradually, the point of view in the text shifts to the life stories of Paľo Gajdoš Jr. He is the hope of the family, the vision of a continuous future (his brother was shot by fascists as a 13-year-old in the village street). It describes the new time during *"Slovak children are also allowed to learn. In higher schools. Slovak teachers are reportedly needed. And they are looking for young people, who could not continue their education. Children of poor peasants, landless people"* (Kondač, 1984, p. 121). The author confronts the old and the new world. However, many villagers are skeptical and do not even claim their own mother tongue. They do not like the idea that from September 1945 there will also be a Slovak school in Suchá. However, the symbolic transformation of spade and hoe into a book and tie is cumbersome from a family point of view. Young Paľko's own mother does not want to let go of the unknown despite the prospect of a possible, happier future. The mirage of a later willowy Slovak teacher in long trousers, a gentleman's suit with pantalons and nice shoes with a briefcase is a guarantee of a young person's life security in the eyes of an experienced mother. The young generation, however, does not learn enough Slovak and does not know Transcius. However, there is an opportunity for change after the war. Young people must also be aware of the breadth and depth of the concept of nationality and learn *"not only Slovak, Slovak language, but also awareness. Something so that we can confess to belong to our own sort [fajta]. In the gentleman's language they call it solidarity with one's nationality"* (Kondač, 1984, p. 126).

4 Identity, longing for freedom and historical facts from the objective-subjective point of view of a minority Slovak in Pavol Kondač's novel

The text also mentions the historical realities of 1956: the crowd's chanting against the government, the speech of the first party secretary on the radio, or the roaring masses of youth at the National Museum. It is actually a description of the psychological change of the city. The symbolic act of cutting a new emblem from the center of the flag is a timeless symbol of the desire for freedom. Kondač depicts the individual and social transformation of this purifying and liberating revolution. However, it will also provide readers with a brutal picture of the bloody attacks. The victims hung by the feet testify to the total inhumanity of the time. Witnesses are not only people, but also the "breathing" buildings on Kalvin Square, Museum Ring Road, Rákóczi Avenue or Sightseeing Square. The author stresses the need for deeper reflection on events during which no one can trust anyone - only his own conscience and eyes. It is a time when the voices of simple farmers and workers are bolder. The text also identifies criticism of former emergency barracks, shacks and shame boards; and therefore collectively calling for freedom and justice. Education is also linked to the awareness of the importance of the mother tongue, which is supposed to help to calibrate one's own personality. Being a Slovak is no longer a fault in the new social conditions, but a virtue. On the other hand, there are also skeptical voices of indifferent fellow citizens in the village. This is all the more painful because it is a pseudo-Slovak speaking against his own people: *"After all, not everyone is delighted with all this blasphemy around us. Why is that? To whom is it necessary?, many say, and often out loud. The world does not crumble on who speaks what language. But let's just continue with Hungarian. At least everyone understands that. And whoever did not like to listen to it already left. Moved to Slovakia. And those who stayed here are no longer Slovaks. At least not so real. All he has to do is keep silent, work, and then he can even get around"* (Kondač, 1984, p. 137). Thus, a Slovak must physically and mentally do twice as much work for the benefit of his own nationality and state. Therefore, it is necessary to start from the class point of view. It is new, post-war, "progressive" behavior. The enthusiasm of building socialism goes hand in hand with the ideas of the new political establishment, also thanks to the consistent alliance policy of the party. It can be interpreted that the symbolic statue of Romulus and Remus amid the lowlands and wastelands of the Lowlands - in Suchá - is a vault for a more socially just future. This crossroad of the Post-War Society is similar to the memory of Paľo Gajdoš Sr. about his wrongs. The distrust of the persecuted stands in contrast to the conviction of the Communists. It is the binary opposition of "our" and "their" world, old and new, behind the plow or behind the desk. In the ideas of the young, the 'lousy' earth summons only poverty; a better life is tied to studying. The elderly, however, naturally, due to historical events, relate to their native soil with awe. Soil is a breadwinner, the alpha and omega, because: *"There is nothing else under the sun worthy of sweat and blood, only the earth. You roll the money, you melt the gold, you lose your sense of reason at once, as brick hitting your head, but the earth will continue to feed you"* (Kondač, 1984, p. 156). A simple farmer wants to be disinterested, neutral - just like the state during the historic revolution. He sees the very existence of colonists as a burden; he is afraid of repurchases and sweeping. The first half of the fifties of the 20th century is effectively described in the text with some psychologization: *"And everyone was equally afraid of State Security. No one ever knew who was on their list. But everyone knew their stereotypical text. State security! Come with us. The door of the jeep was open and people were already thrown into it. Most of them didn't even know why they were taking them. And, above all, the State Security did not even bother to explain anything. They just dragged people away"* (Kondač, 1984, p. 165). The official ideology of the period also appears to a large extent in the text: arms into the hands of the people, the establishment of popular courts, order on the basis of the popular establishment. However, the post-war political coalitions will gradually turn into a dictate of one party. The author describes the (counter)revolutionary ideas and actions in

Suchá (organizing the national guard as the guarantor of order). The transition from comrades to fellow citizens testifies to a new "spirit" of the era. The rage of (counter)revolutionaries in Suchá will be stopped by the municipal revolutionary council. Symbolic are also contemporary political decisions: not only the efforts to build a memorial to the fallen in the world wars, but also to pull down the statue of the Turul from the pedestal. It is actually the root of the human intolerance that contemporary Hungarian politics has instilled in its citizens from an early age (these are the Tóts and those are the Hungarians). The stratification of people also went on a confessional basis: the evangelical Slovaks are poor and the Hungarian Catholics rich. In the events of October (1956), the people rose up against the oppressors and wanted to establish justice in the state. Then, at least temporarily, history turned: Communists on Pestian streets and in Suchá persecuted, tortured and wanted to exclude from the micro-territory. He describes these thirteen days as total disruption with confusion not only in the street, but also in the brains. It criticizes hundreds of thousands of refugees who did not seize weapons in their hands but went to serve a foreign power.

The author effectively describes the welter in individual parts of Budapest. After St. Stephen's Square, at the Basilica, at the Eastern Station, the only thing to be sure is the Lowlands route, which is a haven for crazy headlessness and hopelessness. Inside, however, Paľo Gajdoš Jr. does not feel a personality transformation into a bourgeois. He is the son of a village to which he returns heading to Békéscsaba. In his mind, he has the water-masters of Suchá and their beneficial water from Artesian wells as a symbol of the Lowland. It is a world of peace, unsightly plains and threshers. The described memories of his youth in field work warm the reader's heart. The criticism of the contemporary broadcasting of the radio mentally and the vision of the unscrupulous streets in the name of the revolution physically confirm Gajdoš's distance from the city. But he replaced the oily boots with a tie. Interestingly, the fact of an angry crowd is described. His thoughts, addressed to his own "sort" [fajta] (i.e. Slovaks) about the mother tongue, are worthy of thought: *"Love your mother tongue. Learn it and learn in it. And read. For example, a newspaper. About your own life. The past and the present. For all this must be understood so that we can then look ahead. But also explain what needs to be done so that there is real equality between people. Respect your origin, culture and language. Your work"* (Kondač, 1984, p. 202).

On the wider area the question is asked: who is a Hungarian in the Hungarian homeland? It is a long mental journey for a Slovak - similarly as for Paľo Gajdoš Jr. his pilgrimage home to Suchá from revolution torn Budapest in 1956. The author describes a contemporary city full of disputes (pars pro toto in urban public transport). He confronts the city with the village, describing women coming to Budapest to the market. Their costume is a symbol of inertia and native Slovak is a metaphor of persistence. Laughter and defamation due to the use of Slovak indicates a lack of consciousness of the Budapestian people in this period. The physical path of young Gajdoš leads through the Lowland County and Kecskemét, realizing that in the once famous area Slovaks today live in only two smaller settlements. He therefore criticizes the fragmentation of Slovaks in the country. That is why it is difficult to get to them physically and mentally, to talk and to get closer to them. This problem also arises within the nationality itself: *"We, too, have moved away from each other. Not only do we not know each other, but we do not understand our dialects very well either. Our ancestors dragged three of them back to the Hungarian plains two centuries ago. Since then, they got worn out. History has scuffed them. Did our once common language survive the fate of drops in the sea?"* (Kondač, 1984, p. 207). Kondač therefore advocates the need to use a single standard language, emphasizing the inevitable participation of Slovak intelligence in the cultural struggle. (But where to get them from when they moved to Czechoslovakia in 1947?) It must be the bridge that teaches the present, acquaints people with the past and shows the future. This should be helped by a school with a Slovak language of instruction, which will raise its own post-war intelligence. They

should become conscious Slovaks longing for education and reading a good Slovak book. Thus, a Tót gradually becomes a Slovak, a thrown away rock becomes a pulsating national minority. It goes with the development of mother tongue that "is above all a matter of emotion. Emotions. It needs to be loved. Like mom. Like a mother loves her baby. After all, the nationality of man somehow stands or falls on this" (Kondač, 1984, p. 209). Meanwhile, the multi-contextuality of Slovak national literature in Hungary is proclaimed, while the author stresses that it should be written: "In mother tongue. But not just newspapers. Literature. The one we call beautiful. Novels, short stories, nice poems. After all, every nation has its own literature. And its place in world literature" (Kondač, 1984, p. 208). However, for many centuries the feeling of belonging has been ruthlessly plundered from the ancestors, and it is therefore a great task for the young to bring this fire to life. Patterns must be found to give an example to the young post-war generation of their Slovak lives. One such person is mister Havran as a standardized character - a living chronicle of Békéscsaban Slovaks. He recognizes the dialect and reads the Csabian calendar - but not Naša sloboda [Our Freedom] in the standard language. In his family, denationalization is evident, in which grandchildren do not understand Slovak not even fairy tales. The oldest himself is considered to be a sort of a lowlandish Csabian mix of a Slovak and Hungarian, who has to inexorably adapt to monolithic state Hungarian policy on a daily basis. It is important, however, to appreciate his complex wisdom of life "in simple but wise words, all history is hidden. They contain a piece of our past, our presence and variations of the future" (Kondač, 1984, p. 214).

In the case of young people who were in higher education after World War II, the inner voice was refreshed, a kind of distancing from the usual indifference towards their own and collective destiny. However, to create their own personality their environment or surroundings are not enough, but they affect their perceptions, contacts, novelties, education. In the big city Paľo Gajdoš Jr. finds happiness. However, in his parents' thinking the 'spirit' of the old Horthy period is described. Among the young generation the poor years have replaced by the opportunity to educate one's soul. Thus, even the most recent mower in the series became a university-educated journalist. Gajdoš's thoughts on Budapest's Great Ring Road testify that another world has come after the war. The love of the young and their common wandering on the Kiskőrös bridge symbolically marks their arrival to their parents. They bridge courting as an old custom to the present. The inexorable criticism of the next father-in-law consists of a broad spectrum of points, leading to the point that genuine newspapers should only be written in Hungarian. However, the young are enlightened, they want to make their own decisions about their own destiny, and do not want to submit to their "stingy and inflexible" parents who understand the new "morals" as strange expressions of love. It is important, however, to walk together on a bumpy path of life, thus gradually creating the destiny of man and nationality. A marriage before the registrar is also valid as before the sacred image of God; it is not a sin or a fall. Today, it is already a heroic act when after constant humiliation a young bride in Suchá voices her opinion. The times and decades of the 20th century have been changing ... The important thing is the harmony which culminates in the text even when a protestant approaches with a catholic. On the other hand, contemporary agitation (1956) leads to the finding that restoring the order requires a Soviet army that literally saves people's lives. Thus, a simple worker, once landless, gets into the swirl of local politics and comes to the contemporary opinion that the only judge can be the people: whether in Orosháza, Szolnok or Ráb.

At the beginning of the 1960s, the creation of collective farms and the associated agitation of unruly peasants were present in Suchá. The author portrays the Communists as ideologically convinced fighters for truth and bread. They do not believe peasants who are also distrustful of workers and workers do not understand workers' intelligentsia. Only brave work in the cooperative can bring peace from the rage of the 1956 (counter)revolution. Even in the village there are new times

when Mátyás Rákosi, as the father of his homeland, is replaced by the coat of arms of the new state. Patient, mild, open and honest Paľo Gajdoš Sr. is gradually getting to the center of the political and social events. On a wider area, the bright future of the socialist rebuilding of agriculture is debated, where efficiency will increase in large coherent acres. Interesting is the motive of constant agitation at the future entry not only into the cooperative but also the party. This actually specifies the class struggle in the contemporary village, while the author describes a tough clash of opinions that rises from various social statuses. He emphasizes the common, the united, the organized on state land. On the other hand, he expresses evident criticism of contemporary youth, which does not adequately honor the loose land, nor the village as a whole. A brave job is done by Paľo Gajdoš Sr. than a cow-keeper in the cooperative. However, he serves local propaganda. Individual decisions of the political congress are implanted in the everyday life of the village, while the coherence of people on a national basis is already evident. Marginally there is also criticism of state security and information that they beat people "They will drag them away. Even for a few days. Families do not even know where they are, what has been done with them. And they only release them when they give their signature" (Kondač, 1984, p. 254). The bumpy journey becomes more even levelled thanks to the new world, while the love of the elders for the earth does not change. Thus, the past world without goal and truth will comprehensively be replaced by a new social system in which land has also been and remains the most precious treasure and eternal value. The family remains patriarchal, but still bears the roots of the old world. In it, the old and young do not yet understand the importance of land and the mentioned togetherness. This is regionally objectified in the notice board Družstevná obec [Cooperative township]. It is a kind of contemporary novelty; the beginning of another life. At the same time, the author adequately describes the bad premonition or pulsation of tension in the atmosphere of the village. The drummer was replaced by a microphone, the landless by a cooperative, parcels by big factories. Kondač describes the overall bumpy path of formation of cooperatives from the end of World War II through 1956 to the total completion of the rebuilding of agriculture. It criticizes capitalism and refers broadly to the diversity of the villagers and their thinking. It is a period during which the Slovak word in Suchá brought people closer together under the banner of a common goal. The gradual rehabilitation of Paľo Gajdoš Sr. is evident in the social and party-political fields, and from the human point of view it is quite lengthy. After all he will live to see it; he can enjoy three living children. However, he is quarreled with thoughts about his own grandchildren and their Hungarian tongue. Times are changing, but people still need to set a good example. Ondrej Likier Áchim is mentioned as a famous fighter for the rights of the Lowland Slovaks. He should be the model after which the village kolkhoz should be named. He, too, advocated the need for constant education and struggle for one goal: "And this must also happen in this great family. There is also one goal. The same goal. The road leads in one direction. For the benefit of all. That is why it is important now, as before, to scythe at once. In all hands. If they agree on this, their work will reach far. Finally, he will be able to say that he has achieved his life goal. The scythes whistle again - and not in vain" (Kondač, 1984, pp. 293-294). Man dies, but his actions remain. Paľo Gajdoš Sr. dies senselessly in the grip of the wall and the spur, but his example of human bravery and dignity remains a striking example for the Slovaks in Suchá, Békéscsaba, Budapest - the Lowlands, Hungary and Slovakia.

After all, the importance of Kondač 's novel increases and is emphasized by the fact that it was the first novel by a Slovak author in Hungary. It remains a work in which the author documents not only the maturity of his nationality, but above all "its deep roots. This is the basis on which to build literary and real life. Kondač captured the soul of his national community, and this elevated his prose" (Andruška, 2018, p. 155).

5 Psychological Probe of "Slovak-Hungarian" Thoughts on the Individual and Their Concretization in the novel Neskory návrat [Late Return]

This sentence (perhaps in a graded sense) also applies to Pavol Kondač's next novel, entitled Late Return (1987, reedition 2012). In this work, the author raised an important question of (self)identification on the basis of awareness of one's own Slovakness from the position of minority existence. In these coordinates of being in the Lowland, space-time is the end station after a long journey of life; a refuge, a shelter for the main character of the story. The central motif of the novel is a two-way journey (from the sheds to the opera, from poverty to wealth - but also from Budapest to his native Merinčok). The famous opera singer Juraj Majron returns to his mother's grave and birth house. With a psychological "drawing", the author points to the need for "communication" with the late mother, criticizing formalism and petty-bourgeois behavior. After a tedious journey he describes his strange feelings as he returns to the roots, where: *"Having grown old a man longs for home. For the right, family, the fatherly, motherly, in which he experienced the most beautiful moments of youth. Moments that were later suppressed by glory but never extinguished in the hidden depths of the soul. Long muted flames flare again. And they burn, because in vain we seek parents and childhood. They were obscured by darkness that cannot be warded off"* (Kondač, 2012, p. 142). The author also emphasizes the importance of the tradition of ancestors and bygone times with a certain fear. In this way, the past and the present blend together without which there is no future. It is a polemic of the creative Slovak-man with himself in the attribute of inner disorder with the question of his own identity. Dual identity of Slovaks appears in Hungary: Juraj Majron's character is a merger of Slovak and Hungarian language. The birthplace symbolizes the mother tongue (Slovak). Man plants symbolic shoots along the bumpy path of destiny. The roots are engraved in the black Lowland soil during childhood and sprouts sprout during adulthood in the capital. After all, this creates an ambivalent feeling of an aging artist who needs silence after busy moments. The desire for the order of life is present in his soul on the basis of a dispute between individualism and collectivism (individual - family). The shed's loft or rocker well are "holy" attributes of childhood memories. Nowadays, these thoughts are in contrast to the often even philosophical thoughts of extinction after the fall of life. The gradually pausing farmer's life and the image of the low-lying lowland in the ripples of wheat fields lay the basis for the idea of the transience of man-artist.

The text also stresses the need for education in the background of tradition. Patriarchal peasant life is characterized by the social stratification of the village (teacher and pastor as the "soul" of the village). Doubts are only within the human being; people who live in a szállás must behave confidently outside. He is supported by his faith in God, who gives hope to the Lowlands. God's will is determined through the empiric reality of the old women-villagers. Even in these reminiscences, however, a cruel period of World War II occurs. The author points out, on a wider scale, the importance of mastering the Slovak literary language, criticizes the denationalization and emphasizes the need for the unity of the Slovak minority in Hungary. Emphasizes the necessary emotional relationship to the Slovak language; using Juraj Majron's character he describes the real state of contamination of Slovak with Hungarian. It highlights the importance of literature that preserves the testimonies of the past on paper. The birthplace is holy, close to the heart. Even the main character feels best among his own people (a woman with a scarf on her head, a man in a clean costume), who are clinging to the soil. At a symbolic late return to her, Majron feels a painful and exciting feeling. His return is (individually) rare as a drop of water during the hot Lowland summer. The strict law of the region gives it the seal of certainty and (self)preservation, emotions of joy and grief from cultivated land and interpersonal relationships. The body thus becomes one with the soul and creates a symbiosis of precious mankind. Majron's existence in Budapest is interwoven with art education. Despite this prism, the author emphasizes the need for learning and permanently

crafting skills (for Majron it's singing). Gradually, the sense of inferiority was reduced, for fame has become a factor in the life of the (already) world-famous opera singer. The boots were replaced by shoes, dust by asphalt. The hundred-spired Prague, majestic Vienna and elegant Paris gradually formed a counterpart to the open plains of the lowlands from his childhood. However, in this case too, it is necessary to preserve the Slovak identity based on a real understanding of and on grasping chances to succeed in the Hungarian cultural context. The point is, however, that the ancestors of Juraj Majron were Slovaks who taught him to love Slovak and like Hungarian. In his life these two languages constantly appear and create an intricate sequence of events. The task of a Slovak in post-war Hungary was to adapt to a monolithic state policy that had surrounded him since early childhood. The author emotionally describes the meetings of little Juraj with Hungarian in kindergarten and elementary school. In the background, it points to the tolerance of the two languages in the consciousness of individuals. As an example he gives the conscientiousness of Slovak pupils, their diligence and modesty. It also mentions soulful teachers who also taught in Hungarian at Slovak school. With Majron he emphasizes the need for gradual improvement in singing: his encounter with an experienced and educated woman-accompanist shows a certain destiny of fate. Part of this is a man with a creative soul with multiple poles that complement each other. It is important to note that: *"Every man's life is created first and foremost as he directs it. Circumstances, conditions can influence our intentions, our ideas, but first of all we ourselves have to do as much as possible in our own interest"* (Kondač, 2012, p. 89). An independent step into the unknown (human and artistic) future was only the first sprout that did not break even when Hungarian collaborators took over. The author confronts their primitivism with the human aspirations of university listeners of music and singing. They are descendants of scallywags from szálláses, skirmishes like Sándor Rózsa. They express their bravery even during the state of emergency when Budapest turned into a drowning ship. The author effectively describes the retreat of the Germans and the arrival of the Russians. It is a cruel time in which: *"Everyone who lives is suspicious. To everyone. Friends will also become enemies. Good people are evil and vice versa"* (Kondač, 2012, p. 105). Kondač describes contemporary realities: persecution of communists, hiding on the attic, visits from the state security and so on. It is a time in which life can be saved by a friendly word or a sincere look. The uniform is thus "humanized" and at the highest point of every Lowland settlement and town a light beam of hope, life, education - the mentioned path - appears. Gradually, the peace returns to the szállás: the sun warms, the farm-hands (bíreš) feed the farm, the farmwives milk the cows, pulis are jumping around the animals, the pigeons are flying over the hens, the turkeys are overfed with grains. People enjoy peace while vintage activities are being described in full swing. Good Lowland wine (kadarka) is a symbol of persistence. The peasant work associated with the Christian faith creates a solid foundation for the future. It is concretized in the above mentioned way of life of Juraj Majron. His profession became teaching and piano, history and language a weapon. Gradually he crystallized as a classic of domestic and international musical life, which in the memory of the nation and nationality can live on intensively. Just like the memory of the mother on the way to her grave. Just as thanks to this novel, the world of szálláses of the Slovaks in Hungary through the prism of the life and thoughts of Juraj Majron himself.

6 Conclusion

Even on the basis of the above-mentioned attributes, it is clear that they are very important literary facts that testify to *"their character of permanent mobility, evident instability, and constant inventive reformulation of verbal and literary matrices, which means that literary texts ought to be reinterpreted through ever new disseminations of literature. In Skulj's view, in the intricacy of cultural memory and cultural transfers it is necessary to keep records of traces which reestablish continually the singular manifestation of literature in a certain geocultural space"* (Skulj, 2013, special issue). That is why current

approaches to past texts are always helpful. In national being, the mentioned transfer is extremely graded and the given cultural memory is important - even in the space-time of the Slovaks in Hungary.

The author of "our" first novel also has great merit in that "he had the courage to open his soul wide open and lay everything on paper as he thought. To raise a number of our burning problems and to think about them. Not hide to, misstate or distort anything. That's why his novel is exciting and interesting for us" (Papuček, 1985, p. 163). He created it "a sculptural picture of the key moments of Hungary and the life of the Slovaks in it, and thus his novels have a significant cognitive value" (Polónyová, 2016, p. 108).

This is one of the reasons why the above-mentioned novels (with smaller contemporary determinants) represent timeless literary works, which are influenced by objective factors in the lives of individuals' fates. The author consciously used the inner multidimensional sequence (from objective to subjective and vice versa). The positive aspects of these texts are the consistent work with words, the attention to detail, the impact of the episodes, the absence of avoidance of socio-political problems and topics, and the ability to reconcile the language specifics of Slovak enclaves with the requirement to use standard Slovak as the main criterion of art. Kondač's "epic scope is wide, his novels are saturated with rich material of life ... it exposes the national issues in its contradictions ... it captures it in the context of social transformations of society" (Tomiš, 1990, p. 74). That is also why these works are still valid in the Central European context.

In his two novels, Pavol Kondač pointed out the twisting fate of Slovaks in Hungary in the 20th century. Even with hindsight, these are testimonies that reflect the complex national development of Lowland Slovaks from an individual and societal aspect. That is why they still have our attention.

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Primary Paper Section: A

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THE SCHOOL SOCIAL WORKER'S AGENDA THROUGH THE EYES OF TEACHERS

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This paper is an outcome of the VEGA scientific project No. 1/0288/17 Factors of school social work institutionalisation and the VEGA scientific project No. 1/0134/17 Importance of value orientation – expectations and prospects of the young generation with regard to their employability.

Abstract: The aim of the presented part of the research is to map teachers' views on the problems of pupils and their families falling within the competence of a social worker, as well as to focus on the activities of school social workers that are desirable in solving children's problems. The research sample consists of 398 respondents from primary and secondary schools in the Košice and Prešov regions, with the average age of 38.9 years, and the average length of respondents work experience of 13.4 years. Based on the analysis of the results, it can be concluded that the scope of work of the school social worker primarily includes the area of counselling on the social security system and social and legal protection of children provided to pupils, parents, teachers; assessment of the family environment of pupils; cooperation with the pupil's family, social welfare authorities, other institutions, organizations and activities aimed at preventing socio-pathological phenomena at school.

Keywords: School social work. Activities of school social workers. School success. Children from lower socio-economic backgrounds.

1 Introduction

At present, the profession of school social worker in Slovakia does not enjoy a good position. The current situation features the absence of legislative enshrining of this job position, which results in, for example, the integration of work tasks into other school environment professions not fully prepared in terms of time and expertise to face the current problems of children and youth. In this context, the present paper introduces selected results of the research carried out in the academic year 2018/2019. The paper aims to offer partial findings of the research on identifying the factors of institutionalization of school social work in Slovakia, which show teachers' view of activities and problem areas characteristic of school social work in our country. The interest is focused on two of the basic levels of school social work, which are also considered as conditions for its institutionalization.

There is no doubt that school social work has an irreplaceable role worldwide in addressing the diverse problems of children and youth. The establishment of its theoretical foundations dates back to the beginning of the 20th century and is related to the definition of the school social workers workload, which would include key areas concerning the optimization of school conditions and the child's position in the school system, school attendance support and children's literacy. The list of scholars, whose research activities have made it possible to shape the competency model of school social workers worldwide includes the following authors: Oppenheimer (1925); Alderson and Kirshef (1973); Costin (1969); Allen-Meares (1995; 2004); Dupper (2003); Constable (1999); Webb (2003); Openshaw (2008); Speck (2009) et al.

In Slovakia, social work is currently developing in diverse spheres in accordance with its multidimensionality and transdisciplinarity¹. However, the school environment remains the domain of teaching and other assisting professionals. The absence of the definition of school social work in the school environment and in the area of legislation is also reflected in its absence in public awareness.

On the other hand, it is worth noting that, within the European context, we are facing a number of challenges today, as reflected in the National Action Plan for Children 2013-2017. These

challenges relate in particular to the lack of provision of services for children and their families and the lack of child protection. As a result, phenomena such as exploitation, neglect, exclusion, discrimination, limited access to information and education or social protection and health care persist. At the national level, there are also many current issues relating to the protection of the rights of, in particular, vulnerable groups of children and extending to the sphere of social work, which could contribute significantly to their solution in cooperation with other relevant actors.

2 Methodology

In view of the above, we focused on teachers' views on the issue of school social work, as they are the key actors spending most of their time with children and knowing the school environment intimately or the current problems of the educational process. The main objective was to find out the factors of institutionalization of school social work in selected primary and secondary schools in the Košice and Prešov regions in Slovakia.

The research questions posed in the present paper concerned the definition of the range of problems of pupils and families the solution of which falls within the competence of school social worker and what activities performed within this profession are desirable in solving the problems of individual subjects. The research sample consisted of 398 respondents, 71 (18%) men and 297 (75%) women, while 30 (7%) respondents did not respond. The average age of respondents was 38.9 years and the average length of work experience was 13.4 years in the positions of headmasters, deputy headmasters, class teachers, teachers, educational advisors and special education pedagogues.

The selection of the research sample was non-random, occasional, while primary and secondary schools in Košice and Prešov region of Slovakia were addressed. The data collection was carried out in the academic year 2018/2019 using a questionnaire created by T. Matulayová, which was modified and supplemented on the basis of Skyba's preliminary research and research works. More closely to the research methodology Skyba (2014).

2.1 Specific issues falling within the competence of school social workers

The following part of the questionnaire directly verified the perception of the position of the school social worker by identifying specific issues that the school social worker should be involved in. We focused our attention mainly on the question whether respondents consider it desirable that the school social worker should participate in solving specific selected problem areas. Because of the scale chosen, based on the average score obtained (Figure 1), we can conclude that the higher the average score obtained, the more respondents consider it potentially desirable to involve the school social worker in solving the problem area. According to the respondents, the work of the school social worker is particularly desirable in the following problem areas: truancy, learning problems resulting from the socially disadvantaged environment of the pupil's family, learning problems resulting from different language and cultural environment of the pupil.

¹ The issues are also discussed by Poklembová (2013), who puts them in the context of interdisciplinary cooperation.

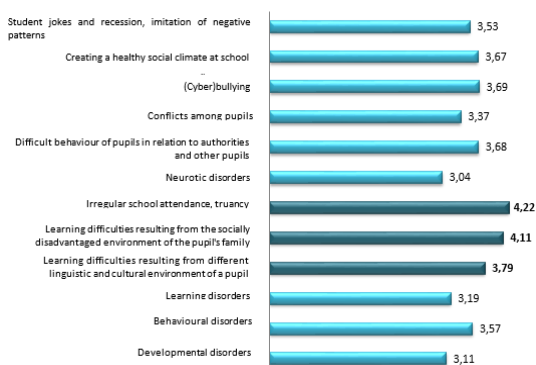


Figure 1 Average respondents' scores on the issue of school social worker role in selected areas

Similar results were obtained in the research conducted by Skyba (2014). The problem areas identified by the respondents can be included in the issue of social disadvantage, which is particularly relevant in Slovakia in the context of children's school success (e.g., Skyba 2014; Gažovičová et al. 2010; Vančíková, Havířová Balážová, Kosová, Vaněk and Rafael 2017; *National programme for the development of education 2018-2027*; Huttová, Gyarfášová and Sekulová 2012, etc.).

Within the framework of legislation, socially disadvantaged environment is considered to be one that does not offer the child optimal conditions for its development for several reasons, which may concern the area of fulfilling individual family functions, financial security, education of parents and their employment, housing, language ability of a child, segregation and social exclusion². Children from socially disadvantaged backgrounds are thus characterized by the social status of the family, which may be a disadvantageous factor. The lack of resources and unsatisfactory conditions disrupt the interaction between parents and children, as well as parents and school (see e.g. Zipper and Simeonsson 2011). Children from different cultural and social backgrounds often have reduced motivation to attend a school where they often face misunderstanding, mockery, prejudice, etc.. There are a number of closely related circumstances that reduce the school success of these children.

As stated by Gallová Kriglerová (2010), it is difficult to accurately determine the number of children from socio-economically disadvantaged backgrounds. A certain clue may be provided by monitoring the statistics with regard to meal- and education subsidy program. Although the statistics data imply a slight decrease³ if compared with last year, the children from socio-economically disadvantaged backgrounds still represent a significant number, which may partly explain the respondents' inclination in identifying the issues mentioned above. Other explanations may be offered by some research results (e.g. Skyba 2014; 2018), according to which teachers' work overload and their responsibility constraints are accountable for the need for involving a relevant professional in order to ensure the cooperation with families thus addressing the social aspects of the selected issues even of children from socio-economically disadvantaged backgrounds.

2.2 Assistance of school social workers in pupils' school success

One of the aims of the present study was to discover to what extent a school social worker is perceived as an expert in fulfilling specific tasks in the educational environment. The assembled questionnaire battery included six items with closed

questions. The respondents could choose from a set of assisting professionals and indicate who, in their view, ought to be responsible for specific activities. Through analyzing the frequency of respondents' individual responses (Table 1), it is possible to infer that the respondents consider a social worker an expert whose chief responsibility is regarded as that of providing counseling for pupils, parents, teachers in the matters of the social security system and social and legal protection of children, assessing of a pupil's family environment if certain issues arise, cooperating with a pupil's family, welfare authorities and other institutions, and being involved in the activities aimed at preventing socio-pathological phenomena in schools. Consistency with the results given by Skyba's (2014) research conducted in 2012 was observed also in this particular case.

Table 1 Analysis of the frequency of tasks undertaken with regard to a person's expertise

	Teacher	Special education teacher	Psychologist	Social worker	Σ
Assessment of a pupil's family environment in case of occurrence of certain issues	37	29	87	245	398
Organization of activities aimed at preventing socio-pathological phenomena in schools	55	80	105	158	398
Cooperation with a pupil's family, social welfare authorities, and other institutions and organizations	116	41	40	201	398
Providing counseling for pupils, parents, teachers, with regards to the social security system and social-legal protection	26	49	58	265	398
Assisting pupils with emotional problems and behavioral disorders in joining a peer group	45	63	237	53	398
Promoting a school, contributing to its positive public image	286	16	28	68	398
Σ	565	278	555	990	

Similarly, based on the average score obtained (the higher the score, the more desirable the item), it may be concluded (Figure 2) that, as indicated by the respondents, the responsibility of social counseling, a responsibility of all school social worker' selected responsibilities, is the one that would contribute most considerably to pupils' school achievement; this responsibility aims at early diagnostics and provision of counseling for parents and pupils in the matters of material and social needs.

² Act No. 245/2008 Coll. on Upbringing and Education sets out three criteria that must be met in order to identify the environment as being socially disadvantaging for the child in the educational process.

³ In 2018, 53,554 children facing the risk of social exclusion received a subsidy to support the development of their eating habits; a subsidy to support education and meeting school obligations was provided to 51,286 children (Report on the Social Situation of the Population of the Slovak Republic for 2018). In total, the above-given numbers represent 13% of the total number of all pupils.

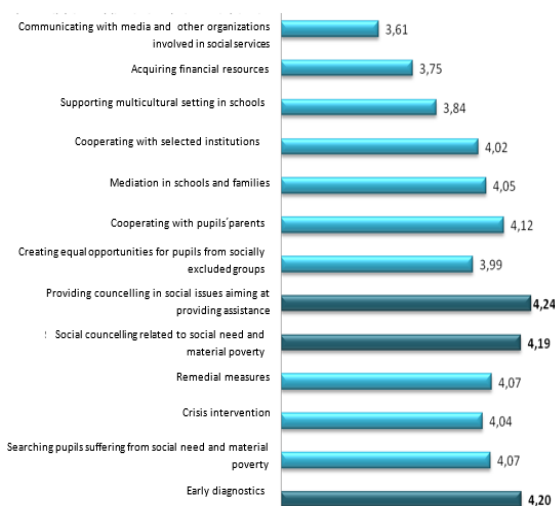


Figure 2 Description of the average respondents' scores regarding the question on the role of a school social worker in enhancing a pupil's success

It is necessary to pay particular attention to the school success of children from socio-economically disadvantaged backgrounds because it predetermines their opportunities for successful management of their everyday life in terms of finding a job and minimizing the risk of reliance on social assistance.

As Dubayová and Čekanová state (2014), school success and school failure are important factors influencing the integration of pupils into society in terms of their future employability on the labor market. School success is a complex phenomenon whose components are difficult to precisely define. Efforts to conceptualize school success have resulted in the development of various diagnostic tools. Pupils' school success profile (SSP) is specified through identifying the relationships among its multiple determining areas. One of them is a pupil's social environment comprising various factors such as parental support, peer acceptance, family environment, etc.⁴. In order to determine success, its impact on the results achieved by pupils in the school environment is examined. Based on the survey results, certain programs with positive impact on the selected determinants are prescribed; these programs are accessible to school social workers.

A number of scholars have tried to define the concept of school success (e.g. Giavrimis and Papanis 2008; Helus 1982; Stork and Mares 2001 and others); they associate it with school results, a child's potential, motivation to learn, etc. Two Slovak scholars (Dubayová and Čekanová 2014) also attempted to define the concept. On the basis of their research, they identified several perspectives of the concept including a child's personality, and their emotional, social, working and behavioral characteristics. According to the above-mentioned scholars, the possibilities and perspectives of school social work may be chiefly seen in developing the social aspect of pupil's school success related to communicativeness, cooperation with peers, and respect for authorities, conflict resolution or assistance to peers.

The respondents of the present research expect the benefits of school social work in enhancing school success, particularly in cooperation with families and organizations, as well as in counseling, diagnostics and assessment, which, we believe, could contribute to identifying the major school success factors through determining and developing social support, children's strengths or their motivation to learn.

3 Conclusion

According to the National Association of Social Workers/School Social Work, school social workers play a significant role in addressing a variety of pupils' needs in their educational environment. The profession of a social worker may serve as an inseparable link interconnecting school, home and community. According to the Association, a social worker's responsibility is to assist pupils in achieving school success. School social workers work directly with school administration, as well as with pupils and their families thus providing mental health intervention, crisis management and support services. With regard to the given definition of competence, partial results of the present research may indicate that the profession of a school social worker in Slovakia is justified. In the present research, several areas were considered desirable for school social workers to deal with, namely counseling for pupils, parents, and teachers in the matters of the social security system and social and legal protection of children; assessing a pupil's family environment in case of issues; cooperating with a pupil's family, with social welfare authorities and other institutions and organizations; and, last but not least, taking preventive measures aimed at inhibiting socio-pathological phenomena at school.

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Primary Paper Section: A

Secondary Paper Section: AM

SCHOOL AND FAMILY COOPERATION WITH REGARD TO SCHOOLS PROVIDING INCLUSIVE EDUCATION

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This paper is an outcome of the VEGA scientific project No. 1/0288/17 Factors of school social work institutionalisation and the VEGA scientific project No. 1/0134/17 Importance of value orientation – expectations and prospects of the young generation with regard to their employability.

Abstract: School and family are generally considered to be important personality shaping environments for children that co-create their personality and influence their achievements. Establishing cooperation between them is a key factor in creating good living conditions in order to ensure a child's progress. The present paper introduces the theoretical framework of the inclusive school system, emphasizing the importance of school and family cooperation, while presenting the findings of research conducted by the authors. The selected findings in the area in question indicate the justification of the profession of a school social worker as an intermediary who, in line with respondents' opinions, should address, in particular, the problems of disadvantaged pupils, provide assistance by focusing on the consequences of the clients' problem situation (pupils, parents, etc.) and by working with families and other community members.

Keywords: Inclusion. School social work. Cooperation. School. Family.

1 Introduction

School is a social institution closely associated with important societal issues reflected in the ongoing transformation of the education system. Today's education does face several problems, including the need to modernize and equip schools, as well as the need to perceive and respond to new educational challenges, especially the inclusive nature of the school system, which is one of the priorities of the reform efforts in the education sector in Slovakia. The term inclusion is sometimes used as a synonym for desegregation. As Pauliniová and Tichý (2011) point out, despite the common elements, these are two different concepts. While desegregation primarily aims to eliminate racial and ethnic segregation of pupils, achieving inclusion is a longer-term process involving school system reform intended at achieving equal opportunities within the education system for all children and education for otherness, which is perceived as a positive value. In the context of inclusion development support, the school may be understood as a system of social interactions (Havlik and Kořa 2002), which requires a comprehensive understanding of the partial changes of its individual segments with respect to several components affecting inclusion in schools. Huttová, Gyrafášová and Sekulová (2012) argue that these components at the class and school level include, for example, cooperative problem solving, heterogeneous classes, differentiated instruction based on individual educational needs, mutual cooperation, positive attitudes of teachers towards all pupils or flexible supportive measures implemented by professionals including social services workers. Inclusion is an umbrella term that affects children's progress, their educational achievements and school success. Cooperation between the school, the family and the community is an important factor in supporting the children's school success and inclusive education. Since we perceive this topic to be highly up-to-date and in order to bring new knowledge of the possibilities of (school) social work in this area, we examined how teachers approach and perceive this issue. The aim of the paper is to present, through the results of research on the factors of institutionalization of school social work, the teachers' opinions on the cooperation of school and family with regard to support of inclusive environment in schools.

2 Methodology

The selected results presented in the paper are based on the findings of the research conducted. The research data were collected in the academic year 2018/2019. The study methodology was created by modification of the questionnaire

by T. Matulayová, based on the research methodology developed by Skyba (2014). The data were processed using a descriptive analysis in the SPSS 20 program. The selection of the research sample was non-random, occasional, while primary and secondary schools in Slovakia were addressed. The research sample consisted of 398 respondents, 71 (18%) men and 297 (75%) women, 30 (7%) respondents did not respond. The return rate of questionnaire was 84%. The average age of respondents was 38.9 years and the average length of work experience was 13.4 years in the positions of headmasters, deputy headmasters, class teachers, teachers, educational advisors and special education pedagogues. The results presented relate to the items concerning the institutionalization of the school social worker profession, their job description and current strategies for solving the problematic situation in the school process.

3 School and Family Cooperation

Nowadays, there is a growing demand for a school to become a place to support the activity and creativity of a child, which is reflected in the requirement to move away from the emphasis on mechanical instruction and towards active forms of teaching. The quality of the school comes to the forefront, which is accompanied by variability given by current social needs. It covers the aspect of personnel capacities and their stability, the value aspect given by work ethics, the target aspect in terms of concrete and clear objectives, the aspect of school and family cooperation, the aspect of environment given by optimum requirements and evaluation, etc. (Turek 2005; Poklembová 2013). In the present study we focus our attention mainly on the field of active cooperation of parents and school. Based on the results of the research, the respondents consider this area to be crucial for the work of the school social worker. According to the respondents, the school social worker should, within the scope of their responsibilities, devote their time (Figure 1) to providing counseling services to parents, pupils and teachers, recording problematic cases and ensuring interconnection of relations between school, teachers, pupils and parents.

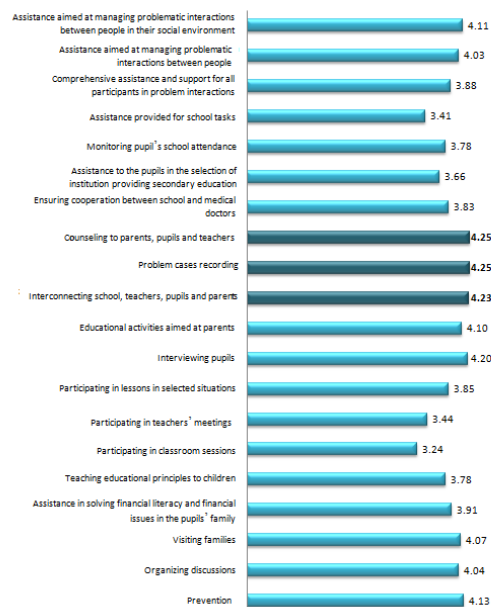


Figure 1 The average respondents' scores obtained in terms of the activities they believe should be carried out by the school social worker

The analysis uncovered two specific elements characteristic of the school and pupils' family cooperation. These include the limitation of cooperation only to the cases of problematic behavior (Figure 2) and obstacles to the cooperation process due

to the disruption of teachers' autonomy (Figure 3). Both aspects will be discussed in detail below.

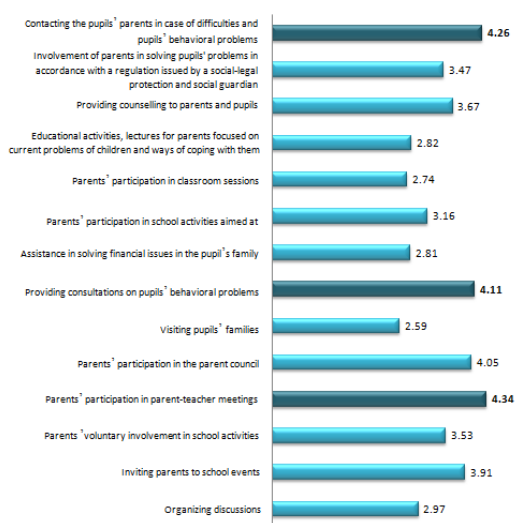


Figure 2 The average respondents' score obtained in terms of identifying the most common way of cooperation between school social worker and parents

Brezovská and Gránska (2018) point out that the relationship between parents and school should not be limited merely to contact and cooperation in the event of problems. They also note that the most common forms of contact in Slovak schools are in the form of parent-teacher meetings. Collaboration in the sense of showing regular interest and inquiring about the child's conduct in the school and family system, its progress, etc., is backgrounded. Positive examples in this respect, according to the authors, are the countries in which parents co-create an inclusive school system by taking the initiative themselves through the creation of formal institutions in which they address diverse topics and manifest interest in school life. Similarly, schools engage parents in school life by allowing them to organize extracurricular activities and to participate in promotional activities aimed at changes in the education system. The benefits of cooperation are evident for both school and parents. The authors stress the fact that, on the one hand, parents acquire partners in the school system to participate in solving the problems of their children, which eliminates the burden of feeling of non-shared responsibility in solving various issues of their children. On the other hand, the school acquires partners for organizing various activities for pupils, deeper insight into the family environment and information necessary for the development of an individual approach to pupils. The overall picture of successful cooperation in the context of increased interest in home and school life is also reflected in the positive image of school in the eyes of children, children's respect for teachers, and is a factor affecting their school success. Brezovská and Gránska (2018) state that in this context dominant attention should also be paid to children from socially disadvantaged backgrounds and the cooperation of the school and their parents, given that this increases the chances of children in education and successful completion of schooling.



Figure 3 The average respondents' scores in terms of obstacles in the current cooperation with pupils' parents

As Scholzová (2012) states, the partnership between school and parents has several benefits, such as planning joint activities, improving school success, creating opportunities for developing communication and coherence, etc.. However, it is questionable to what extent the cooperation and partnership between school and family is of positive value and when it can have negative consequences for the development of the child. This aspect is discussed in detail by Vagačová (2018), Skyba (2018), Majerčíková (2015) and others.

There are several models describing and analyzing the relationships between school and family. Today, the most debated model is a model of shared responsibility, which accentuates providing more space for parental involvement in school-related affairs, as well as the shared responsibility of school and parents for school achievement and pupil's progress (Rawn 2003, in: Majerčíková 2015). However, too much emphasis on these aspects also causes some difficulties. In this context, Majerčíková (2015) mentions, in particular, the blurring of differences between the socializing environment of the school and the family and the disruption of their roles, the disadvantaging of families and parents in their relationship with the school (pupil's success due to the involvement of parents carries the risk of excluding the children whose parents do not engage in school activities).

Another difficulty is the limitation of the teacher's pedagogical autonomy in terms of excessive interference of parents in the teacher's competence. The latter dimension has also been proven by the preset research results, showing that teachers consider the failure to respect their autonomy to be one of the major obstacles to the current cooperation with pupils' families. Other relatively frequent answers included an obstacle related to parents' lack of interest and undermining the teachers' professional judgment.

4 The role of school social work in the development of an inclusive school

Based on the individual findings, the following question was posited: What responsibilities, in teachers' views, should a school social worker have if those are to correspond to teachers' notion of the relevant assistance and its forms? Out of the available options, our starting point was the current necessity to support inclusion in schools. It is one of the key topics of reform efforts concerning the issues of the Slovak system of education. In the Slovak context, the topic of inclusion in schools was analyzed by Kriglerová, Medřová, Rapošová and Šedovičová (2015), Gallová Kriglerová and Gažovičová, eds. (2012), Huttová, Gyárfášová and Sekulová (2012) and some others. We share their understanding of inclusion as a phenomenon in which pupil diversity is considered a positive feature that is rewarding to all the interactants. What is more, the term also encompasses the necessity to address a variety of children's needs, which would prevent their exclusion.

The philosophical underpinnings of inclusive education are based on not considering pupils' problems as their traits, but rather on taking into account especially the characteristics of the situation, the school and the social context in which there are barriers hindering the children's full participation in the educational process and thus violating their right to the same quality of education. The rudimentary principles that should enhance inclusion comprise the micro-level taking the form of encouraging the participation of all pupils in education as well as of those deemed different for various reasons, as well as the macro-level in the form of policy-making and policy-setting for the diverse needs of the pupil population. Other principles according to Huttová, Gyárfášová and Sekulová (2012) include the requirement to study diversity as an ordinary phenomenon or to provide quality education in the form of teaching and assessment strategies aimed at increasing the potential of all pupils. The items in the questionnaire echoed the features of an inclusive school, among which the present authors rank a variety of factors, such as collaboration among school assisting professionals, application of cooperative learning and problem solving, differentiated attitude to learners' needs and alternative

and innovative learning strategies, involvement of straightforward and active school management, application of a flexible system of support measures (having inevitable professionals including a social worker), cooperation with families and the community, etc.

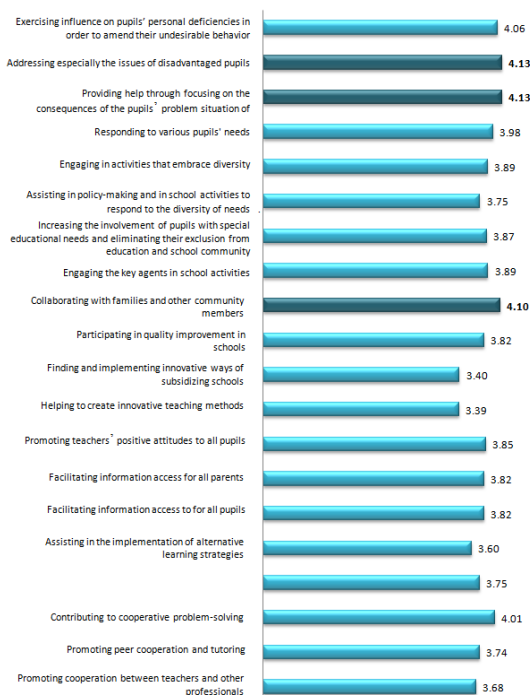


Figure 4 The average respondents' scores in terms of the goal the individual work tasks carried out by a school social worker

According to the respondents, a school social worker (Figure 4) should address the disadvantaged pupils' needs; provide assistance through focusing on the consequences of their clients' (pupils, parents, etc.) issues and working with families and other community members.

The respondents' ideas correspond with the results of the research study conducted by Skyba (2018). In addition to the obligation to focus on collaborating with pupils of pupils' families, the respondents also stressed such an idea of social work that does not primarily address the problematic interactions of a client with the entities in their neighborhood. Rather, they consider the social work as an activity that is associated with clerical activities and the provision of benefits in terms of focusing on the consequences of a problematic situation of a client. Such an understanding of social work often results in assisting entities' expectations that do not correspond to the mission and specific features of social work as a complex activity. It is its specific nature capturing the multidimensionality of a client's life situation including various circumstances or obstacles both on the client's side and the environment which may be responsible for a client's problematic situation. On a pragmatic level, a narrower understanding of social work may negatively affect the interaction between social workers and other assisting professionals and between assisting professionals and pupils and their families. It can also undermine the social work potential in enhancing a social change. At the same time, this is a circumstance preventing the full institutionalization of social work under current postmodern conditions¹.

¹ For more information see e.g. Musil (2010; 2013), Růžicková and Musil (2009), Skyba (2018). The issues of professionalization and establishment of social work are dealt with in more detail in Balogová (2013), Matulayová (2013), Levická (2017), Repková (2010), Navrátil (2005) and others.

5 Conclusion

Effective cooperation between school and family is an important aspect in the development of a child's personality. If there is no correspondence between the values promoted in school and in home environment, a conflict may arise, which, if left unresolved, may result in pathological phenomena in a child (Yaşaroğlu 2016). Based on the theoretical background and partial results of the authors' research, it is possible to conclude that the post of a school social worker is justified since s/he may potentially act as an intermediary between a school and a family. According to the respondents, the obstacles that hinder the implementation of this important prerequisite responsible for pupils' school success include a lack of respect for teachers' autonomy and undermining teachers' professional judgment.

The respondents believe that the factor hindering the development of the current school-family cooperation is the parents' disinterest in such a cooperation, which may also be clarified by the current trend in schools which tend to reduce the cooperation to counselling and attending the pupils' problematic behavior. In the respondents' view, a school social worker's responsibility is based on helping pupils from disadvantaged backgrounds, and on providing connections between schools, teachers, pupils, parents and other community members. According to the respondents, a school social worker should primarily focus on the consequences of the children's problematic situation when tackling their issues. Such an understanding significantly narrows the scope of a school social worker's work and may be a factor that hinders the institutionalization of school social work in Slovakia as well as the dissemination of ideas of school social work as a profession which contributes to the advancement of inclusion in Slovak schools.

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Primary Paper Section: A

Secondary Paper Section: AM

COMPARISON OF SELECTED CONTROLABLE FAMILY ALLOWANCES IN EU MEMBER STATES

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Abstract: The paper deals with the system of application of European Union coordination regulations on the payment of family allowances. It focuses on comparing selected controlable family benefits, namely parental allowance, to compare the duration of parental leave in the EU Member States between 2010 and 2016 with respect to the Slovak Republic.

Keywords: co-ordination, family benefits, parental allowance, parental leave

1 Introduction

Social security policy is one of the components of social policy. Social security law is made up of a number of international treaties and legal norms, legally binded on international legal, political and social documents. By joining of the Slovak Republic with the European Union, we have agreed as a Member State, to the application of European law to the social security system. Harmonization of the reciprocal relationships between social security systems is subject to coordination rules aimed at safeguarding social security rights for citizens enforcing the right of free movement.

2 Coordination of social security systems within the EU

Slovakia's accession to the EU on 1 May 2004 obliges the Slovak Republic to comply with the legal norms of the European Community (EC), thus changing the status of Slovak citizens regarding their movement within the EU countries. New possibilities have opened up for the use of the fundamental freedoms of the EC within the single market, in particular in the form of free movement of persons and job opportunities, migration of workforce, which also has an impact on family benefits. Council Regulation (EC) No. 883/2004 from April 29th on the coordination of social security systems replacing the Council Regulation (EHS) č. No 1407/71 on the application of social security schemes to employed persons, to self-employed persons and to members of their families moving within the Community, Regulation (EC) No 987/2009 of September 16th 2009 laying down the procedure for implementing Regulation (EC) No 883/2004 on the coordination of social security systems, which replaced Council Regulation (EEC) 574/72 laying down the procedure for implementing the EEC Regulation no. 1408/71 on the application of social security schemes to employed persons, to self-employed persons and to members of their families moving within the Community. (more at <https://www.employment.gov.sk/>).

The introduction of new coordination rules also entails new rules in the form of active provision of information to citizens provided by social security institutions and must be available; strengthening cooperation between EU Member States' institutions, which should shorten the time-limits for reimbursement between them, in order to make it more efficient towards citizens and to speed up the provision of services; the development of electronic exchange of information in the field of social security, the EESSI system, set up by the European Commission to reduce the administrative costs of the institutions; the introduction of simplified rules for determining the relevance of legislation relating to the particular situation of the person concerned.

3 Application of family benefits in accordance with the coordination rules

A claim for family allowances applied in accordance with the coordination rules may be filed in any EU Member State in which the applicant or the other parent of the child has a claim for them. The competent authority in the Member State where

the entitled person submits the application for family allowances shall inform the other Member States which, under the rules of the coordination regulations, have the appropriate responsibility arising from the migrant citizen's situation. It means, when applying for family allowances in one of the Member States, in the case of overlapping benefits, the applicant has simultaneously met the deadlines in all other countries where the claimant is also entitled to family allowances. It follows that a migrant citizen cannot lose family allowances because, of the Member State in which he originally submitted the request has submitted it to the competent authority in another EU country late. When assessing the applicable legislation of the Member State concerned in the field of social security, the national authorities are obliged to cooperate with each other. In order to avoid linguistic barriers in their mutual communication, standard documents in the form of portable documents (E-forms) are used to exchange information to enable migrant citizens to claim their right to move within the EU. Under the conditions, the institution of another Member State will obtain the necessary information directly from the competent institution of the applicant's State, which may result in a certain delay in the assessment of entitlement to allowances. The competent institution may also request an authorized person (migrant worker) to provide the information or documents necessary to prove his rights and obligations (EU Committee, 2010). In the following part, we will focus on maternal and parental leave within the EU and compare state childcare in the Member States in terms of entitlement and duration of maternity or parental benefit.

4 Comparison of selected coordinated family benefits in the EU Member States

As a selected controllable family allowance, we chose parental allowance, focusing on family policy tools to enable both parents to participate in child's education and care. We compared state childcare in individual EU countries, namely in terms of the conditions of entitlement and the duration of parental leave with respect to the Slovak Republic in the period 2000-2016. In addition to the length of parental leave, we also compared the duration of parental or paternity leave preceding it. When comparing, we focus not only on the duration of parental, maternity and paternity leave in the years 2000-2016 in the individual EU Member States, but also on their development over the reference period of the years in order to detect their increasing or decreasing trend in duration. As there are countries within the EU that do not have a legislative statutory charter similar to the parental allowance we use the term parental leave.¹

The aim of the comparison is, within the framework of coordinated family benefits, to compare the duration of parental leave in the EU Member States between 2000 and 2016 with respect to the Slovak Republic in order to compare the conditions for ensuring a proper childcare. Based on OECD statistics in the period 2000-2016, we have found that maternity leave varies considerably across EU countries. Germany, Belgium, Austria, France, Luxembourg, the Netherlands, Spain, Finland, Denmark, Italy, Hungary and the Czech Republic have had a constant maternity leave in the period. On the contrary, in other countries the length of maternity leave has been prolonged or shortened. Portugal has reduced the duration of maternity leave (ML) from 2009 from 17.1 weeks to 6.4 weeks and from 2015 only 6.0 weeks, which represents a decline of almost 65%, making it the country with the shortest duration of maternity leave.

¹Deliberately we use the term parental leave, as some EU Member States have legislation in its character even established a similar dose as the parental allowance in Slovakia. Such countries include, for example, Cyprus, Greece, the Netherlands, Ireland, Iceland, Liechtenstein, Lithuania, Malta, Spain, Switzerland and the United Kingdom. The term parental leave is also outlined in Council Directive 2010/18 / EU of 8 March 2010 implementing the revised Framework Agreement on Parental Leave.

The second EEA country with the shortest duration of the ML is Norway², with a current duration of 13 weeks. Until 2013 the duration of the ML has not changed but it increased by 88.88% in 2014 (namely from 9 weeks to 17 and in 2015 it dropped again at the current 13 weeks. Right behind is Germany with a duration of ML for 14 weeks and Belgium together with Slovenia with a duration of 15 weeks. These are followed by the aforementioned countries with a constant length of ML in a given period of 16 weeks, namely France, Latvia, Luxembourg, the Netherlands and Spain. Furthermore, Finland with a duration of ML 17.5. and Denmark together with Lithuania for a duration of 18 weeks. To the European average (according to the OECD 19.1 weeks), Sweden is closest, with a difference of 0.8 weeks in 2016 with 19.9 weeks. Between 2002 and 2015, the ML duration was shorter, lasting 15.6 weeks and in the years 2000, 2001 it lasted 11.3 weeks, which means shortening the duration of ML in the given years by 4.3 weeks from the previous period, and therefore a 27.56% increase from 2015. Sweden is immediately followed by Estonia and Poland with a duration of ML of 20 weeks. The percentual increase in the standard length of MD is 21.43%, which is 6 weeks. In 2006, ML duration of 34 weeks started Ireland, but before there was a duration of 18 weeks in the year 2000 and 26 weeks in years 2001- 2005. Since 2007, the duration of the ML is at present 42 weeks, representing a percentage increase of 23.53% over the previous duration. It follows that each extension of the duration of ML has been constantly increased by 8 weeks. With the difference of 1 week, there is Greece, which until 2007 had a duration of ML much shorter than the current length, with a duration of only 17 weeks. Extension from 26 weeks to the current 43.0. is the longest among all EU Member States. The country with the longest duration of ML is England, lasting up to 52 weeks. By 2003, ML had a duration of 40 weeks, so the percentage increase in ML duration is currently equal to 30.0%. Paternity leave is a feature of some EU Member States. In spite of today's advanced pro-family policy, there are still countries that do not know paid paternity leave. Such countries include Cyprus, Malta, Ireland, Switzerland, Slovakia, and until 2016 also Czechia, which subsequently became a newcomer to the introduction of 1-week paternity leave after the birth of a child and up to 6 weeks from the birth of a baby, claiming 70% of the wage base. In this case, Slovakia is a questionable country, since it also allows the father of a child to claim maternity leave under certain conditions. As with the mother of a child, the entitlement is subject to a sickness insurance of at least 270 days in the last two years and to the taking of the child into care on the basis of an informal agreement with the mother of the child, but at the earliest after the child has reached the age of 6 weeks. The entitlement to maternity leave lasted 28 weeks and the father of the child could apply it at the latest until reaching the age of 3 years. The other condition is that he must not have an active income from his employment, with the exception of father being self-employed, who can take do business and have income from self-employment at the time of taking a paternity leave. However, this does not mean that the father employee cannot have income from another employment. For the mother of a child, this means that at the time of receiving the paternal allowance she cannot simultaneously receive her maternal or parental allowance and must obtain health insurance. In the case of a mother who has an employment relationship, it means mostly that she returns to work and for the unemployed mother that she enrolls at the Office for Employment as a job seeker and state pays for her insurance. Italy had the shortest paternity leave of only 0.2 weeks until 2015, which in the year 2016 had a duration of 0.4 weeks being same as in Greece and the Netherlands. While Greece belongs to countries with a constant duration of paternity leave in the reference period, the Netherlands has returned to its original duration from 2002 to 2008 in 2015, reducing the duration by 26.0 weeks, representing a drop of 98.5% compared to 2009-2014, when paternity leave lasted 26.4 weeks same as in Luxembourg over the whole period. Countries with a constant duration include Hungary with the duration of paternity leave of 1 week. since 2002. Other countries that have introduced

paternity leave only recently, namely in 2016, include Latvia with a duration of 1.4 weeks. and Lithuania lasting 4 weeks. Paternity leave usually lasts for 2 weeks, evidence to this are Member States such as Denmark, Estonia, Poland, England and one day apart Spain. In England, paternity leave is compulsory, but its duration has been constant since 2003, which cannot be said about Denmark, Spain and Poland, where the length of paternity leave has changed. In Poland, paternity leave was introduced in 2010 for 1 week and consequently in 2012 the period was extended by 1 week. to the current 2 weeks, representing a 100% increase. Spain also extended the duration of the paternity leave in 2007 from 0.4 weeks to the current 2.1 week. In most EU Member States, the length of paternity leave has been prolonged, but in Denmark, since 2002, it has sharply decreased from the previous 17 weeks to the current 2 weeks, which represents a percentage decrease of 88.24%. From 2012, Slovenia introduced paternal leave, which lasted 2,1 weeks and until 2015 equaled duration in Spain. Extension in the form of 0.8 weeks came in 2016, when the length of the paternity leave in Slovenia reached 2.9 weeks, which is an increase of 38.1%. The average length of paternity leave, according to OECD is 8,2 weeks and the closest to this are Austria and Germany with a difference of a couple of days.

From the point of view of coordinating social security systems, we have furthermore focused on comparing the length of parental leave with protection against employment loss in the EU Member States over the period 2000-2016. A specific country is Switzerland, as it is governed by cantonal laws and federal harmonization law. At federal level, family allowances only for employees and self-employed in the agricultural sector are regulated. They recognize family benefits in the form of child allowances, a contribution to attending a vocational training course and a household allowance. In other sectors, it is possible to ask for a child birth grant and a child's adoption allowance in some cantons (https://ec.europa.eu/info/index_sk / Your social security rights in Switzerland_sk). The entitlement to a parental allowance in Belgium is conditioned by the full-time or part-time work of a parent who discontinues his or her private or public service activity for the purpose of childcare from the date of the child's birth or adoption up to the age of 6 years or 8 years child's age at adoption. By 2011, parental leave in Belgium was 13.0 weeks. and has been prolonged since 2012 to the current 17.3 weeks, representing a percentage increase of 33.08%. (https://ec.europa.eu/info/index_sk / Your social security rights in Belgium_sk.) The Greece also has the same duration of parental leave as of 2012, but without financial compensation for care in the form of parental allowance. This means that the parent is protected for the duration of parental leave from the loss of employment due to child care, but without the right to a reimbursement of income. Similarly, England and Ireland are 18 weeks of parental leave. Even though the parents of children in Ireland do not have paid parental leave, some single mothers and low-income families may be subject to a defined form of reimbursement (for childcare) under the exact conditions laid down for single-parent families or a bonus to a family income (ec.europa.eu). With parental leave of 26.0 weeks. followed by Italy, Luxembourg and the Netherlands, representing 8 weeks longer parental leave, with a percentage increase of 44.44% over the previous two countries.

The average duration of parental leave with protection against child labor loss in the EU Member States, according to OECD statistics, is 65.7 weeks, to which Sweden is the closest. Compared to the SR, the average length of parental leave within the EU is by half the shorter. Slovakia with a duration of parental leave of up to 130.0 weeks, which is the eighth country with the longest parental leave in the EU. With the difference of 4 weeks longer to the neighboring Czech Republic and 6 weeks to Hungary. Compared to the country with the longest duration of parental leave, Spain with a length of 150.0 weeks, Slovakia has a parental leave shorter by 20 weeks and the countries with the shortest duration of parental leave, Belgium and Greece, with a length of 17.3 weeks, longer by 113 weeks. This shows that the SR has a much longer parental leave compared to the average length of parental leave in the EU.

²In the EEA, we present the duration of maternity and paternity leave in Norway, as it is also referred to in the table of OECD.

The average duration of maternity leave in the EU Member States, according to OECD statistics, is 19.1 weeks, with Lithuania and Sweden diverging by a few days, exceeding the European average by a few days. Compared to the SR, where maternity leave lasts 34.0 weeks, the average maternity leave in the EU Member States is shorter by nearly 15 weeks. Making it a country with the fourth longest maternity leave in the EU after England, Greece and Ireland. Immediately after Slovakia with a difference of 6.0 week is the Czech Republic and with a difference of 10.0 weeks, Hungary. It follows that the SR is among the countries with the duration of maternity leave high above the average of the EU. The average duration of paternity leave in the EU Member States, according to the OECD statistics, is 8.2. Countries that do not know the paternity leave are Cyprus, Malta, Ireland and Switzerland. Before the year 2016, the Czech Republic was also among them, but in the last year it became a newcomer in the introduction of a 1.0-week paternity leave after the birth of a child and up to 6 weeks from the birth, claiming 70% of the wage base. The country with the shortest parental leave is Switzerland, which does not even know it, because it is a specific country governed cantonal laws and federal harmonization law. They only recognize family benefits in the form of child allowances, a contribution to attending a vocational training course and a household allowance. However, when we define it as a specific country, Belgium with Greece take the lead with duration of 17,3 weeks and with a few days difference Ireland and the United Kingdom with duration of 18.0 weeks. Countries with the longest parental leave include Estonia together with France of 146.0 weeks, Germany together with Lithuania with a duration of 148.0 weeks and lastly Spain, with a duration of 150.0 weeks. Shortest maternity leave of only 6.0 weeks has Portugal the opposite is United Kingdom with a duration of up to 52.0 weeks. Shortest paternity leave of 0.2 weeks duration was until 2015 in Italy, but currently it is 0.4 weeks in Greece, the Netherlands and already mentioned Italy. The longest paternity leave of 28.0 weeks has France. In England, paternity leave is mandatory for a duration of 2.0 weeks.

The duration of maternity leave, which mostly precedes parental leave, has been prolonged or shortened alternately between 2000 and 2016 in individual EU countries.³ From this point of view, the trend of the percentage is an increase in the majority of Member States, with the exception of Portugal, where only a decline could be seen. Within the EEA, the trend of the initial prolongation and the subsequent decline was followed by Norway in 2015. The most frequent changes in the duration of maternity leave occurred in Poland, which alternately went through a percentage increase and decline. The largest percentage increase in maternity leave in the EU Member States, up to 152.94%, occurred in 2008 in Greece. Countries with a constant ML duration include Germany, Belgium, Austria, France, Luxembourg, the Netherlands, Spain, Finland, Denmark, Italy, Hungary and the Czech Republic. Due to the extension of the duration of the ML, the duration of parental leave in Slovakia was reduced, but still with the entitlement to reach the age of 3 years, in the case of extension of parental allowance for the child's health reasons up to the age of 6 years of the child. Thus, taking into account the possibility of extending parental benefit for health reasons, the Slovak Republic is among the EU countries with the longest parental leave period, although the duration of parental leave has been reduced by 6.0 weeks, which represents a percentage decrease of 4.42%. As part of the development of the duration of parental leave, there is a prolongation in most EU Member States. The largest percentage increase since 2000 - 2016 occurred in Austria, of 24.7%. The constant length of parental leave is in Italy, Luxembourg, Czech Republic, Hungary, Estonia, France, Germany and Spain. On the contrary, Denmark, Sweden, Norway and Slovakia were a percentual decline was occurring. The largest drop of 11.67% occurred in Sweden during the period 2000-2016. Paternity leave in the EU Member States has gradually been prolonged in

most countries. The biggest increase in the duration of paternity leave of 26.0 weeks, was observed in 2009 in the Netherlands, but then in 2015 there was a sharp drop of 98.5% on the current duration of paternity leave to 0,4 weeks, which places it among the countries with the lowest duration of paternity leave within the EU.

In 2014, there was a sudden increase in the duration of paternity leave in France by 26.0 weeks, which represents a percentage increase of up to 1300%, making it the country with the longest duration of paternity leave within the EU. In 2009, the duration of paternity leave was also increased in Portugal by just under 17.0 weeks representing a percentage increase over the previous years. Denmark and Austria have a shrunk the trend. Denmark in 2002, with a drop of 88.24% and Austria in 2008 by 50.0%, and a decrease of 33.08% in 2010 compared to the previous year. Despite the fact that in most EU Member States the length of paternity leave is gradually being extended, there are still states within the EU that have yet to introduce the paternity leave.

5 Conclusion

By comparing the duration of parental leave within the EU Member States between 2000 and 2016, we found that they differ considerably. According to the OECD, the average duration of parental leave is 65.7 weeks. In comparison, the length of parental leave in Slovakia is twice that long, making it the eighth country with the longest duration. Taking into account the possibility of extending the parental allowance for the child's health reasons until the age of 6, Slovakia is among the countries with the longest paid parental leave. The advantage is that, in addition to taking an extended parental allowance, moms can perform their work without restrictions and children can also attend pre-school facilities.

Compared to the SR, where maternity leave lasts 34.0 weeks, the average maternity leave in EU Member States is 15.0 weeks shorter, making it the fourth country after England, Greece and Ireland with the longest maternity leave in the EU. It follows from the above that the SR is listed among the countries that are well above the average within the EU considering the duration of maternity leave. Based on the above, we found that mothers in EU countries are valued differently, as the amount of paid maternity leave represents a different percentage of the average monthly wage. Mothers in Estonia, France, the Netherlands, Croatia, Lithuania, Luxembourg, Germany, Poland, Portugal, Austria, Slovenia and Spain receive full wages even during maternity leave.

Despite the fact that in most EU Member States the length of paternity leave is gradually being extended, there are still states within the EU that have not introduced paternity leave yet. As has already been mentioned, the duration of maternity and parental benefits in the EU Member States varies, so it is possible, after termination of the allowances in the primary country to ask for allowances in the secondary country, if the duration period of the allowances is longer in this country. Also, with the lower amount of the contribution paid, the entitled person has the option to apply for a supplement from the secondary country to the amount of the allowance in that country. It is unrealistic to impose the same maternity and parental benefits in all EU countries but by some harmonization of social security systems and equal treatment of entitlement to family benefits within EU countries, the migration of the parents with goal of economical usage of the social system could be limited. The structure and traditions of the social security systems of the European Union countries do not allow the development of identical community social systems, but the free movement of persons, Europeanization as a form of globalization, and efforts to create a European social model have an integration tendency in the area of family benefits as well.

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Primary Paper Section: A

Secondary Paper Section: AO

USE OF ARTIFICIAL NEURAL NETWORKS IN THE CAPITAL MARKETS

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Abstract: Methods of stock market analysis have undergone long-term development. In particular, stock market failures and financial crises were the driving forces behind the search for new methods and forecasts. We are currently living in a time of digital boom that has greatly helped advance science in all areas. This fact was also reflected in the area of trading on capital markets. Artificial intelligence methods are at the forefront. The paper aims to analyse the predictive ability of artificial neural networks with the application on capital markets. The results of the analysis suggest that higher prediction accuracy is achieved by networks with a lower number of time delays.

Keywords: Capital markets, Prediction, Artificial neural networks, Nonlinear autoregressive network

1 Introduction

With Brexit approaching and a slowdown in the growth of several economies, investors are increasingly motivated to analyse capital markets. In addition to fundamental and technical analysis, attention is paid to statistical analyses of time series and artificial intelligence. Methods of stock market analysis have undergone long-term development. At present, fundamental and technical analysis are the most developed, while psychological analysis is less recognized. Time-series analyses and artificial intelligence methods are also at the forefront. Fundamental analysis seeks to quantify the intrinsic value of stocks. It deals with the basic factors of global, political, economic, sectoral and corporate character, which significantly influence the exchange rate or the intrinsic value of the stock. The fundamental analysis is carried out at three levels: the macroeconomic level, which analyses the economy as a whole and its impact on stock prices; the sectoral level that examines industry specificities and their impact on equity rates; the microeconomic level that conducts a financial analysis of individual companies. Technical analysis, unlike fundamental analysis, focuses only on the capital market. By examining past and current information on volumes and movements in share prices, it seeks to predict the development of individual stocks or the overall market development. The technical analysis leads to much faster decisions. Like the fundamental analysis, it applies a structural approach. This means that it applies first to the whole market, which is mostly represented by a market index, but also to the relevant sector, where it mainly uses sectoral indices and the overall sector's share of the economy, and finally also analyses individual stocks. Technical analysis consists of an analysis of stock price graphs and an analysis of technical indicators (Momentum, MACD, RSI, SSTO, ADX, CCI, W%R, the combination of moving averages, etc.), which predict the evolution of prices shares in the future. Methods of time series analysis can be divided into two groups. One group consists of methods where the development of the modelled indicator depends only on time. These are decomposition methods, Box-Jenkinson models and spectral analysis. The second group consists of econometric modelling methods. Frequently used models of financial time series analysis include Auto-Regressive Moving Average (ARMA) model, Auto-Regressive Integrated Moving Average (ARIMA) model, Auto-Regressive Conditional Heteroscedasticity (ARCH) model, and Generalized Auto-Regressive Conditional Heteroscedasticity (GARCH) model.

Using artificial neural networks (ANNs), it is possible to model complex high-dimensional data that we cannot describe by simple rules and classical statistical methods. Neural network modelling of systems is highly abstract, the same network can be a model for different systems without changing the structure if different data are used to learn the network. Neural networks, genetic algorithms, and fuzzy logic theory significantly contribute to the development of data analysis and modelling. They are important tools for decision support. Creation of the

neural network itself, starting with data preparation, selecting the number of layers, selecting the number of neurons in each layer, choosing training methods, activation functions, etc. is still a matter of exploration and experimentation. The neural networks are gaining a lot of attention among the scientific community. One of the most important features of neural networks is their ability to universally approximate functions. It often happens that we have a very complex system whose description is almost impossible or would require too much computing time. However, we have data that enters the system and corresponding outputs. In this situation, we can use a suitable neural network that learns to behave as a monitored system. This is an important factor that determines the application of neural networks in capital markets.

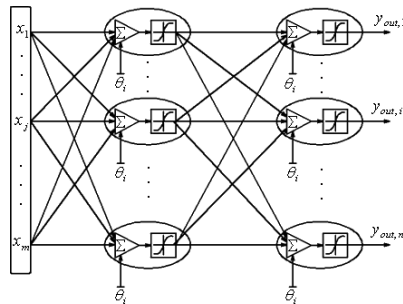
Researchers are currently paying close attention to the use of soft computing methods to predict financial time series. A comprehensive overview of the published articles dealing with stock market prediction and portfolio selection models can be found in Rather, Sastry, and Agarwal (2017). The authors focused on articles in which traditional mathematical models were used and articles in which artificial intelligence-based models were used. In the study Calvacante, Brasileiro, Souza, Nobrega, and Oliveira (2016), the authors provided a comprehensive overview of articles on computational intelligence methods in financial applications, dealing with researches in preprocessing and clustering of financial data, forecasting future market movements and mining financial text information. Comparative studies of forecast accuracy of ANN and ARIMA models were conducted in papers Adebiji, Adewumi, and Ayo (2014), Cocianu and Grigoryan (2015), Safi and White (2017), Tiwari, Bharadwaj, and Gupta (2017), reported results showed higher accuracy of ANN predictions. In the study Lahmiri (2017) a simple ANN forecasting model trained with technical analysis indicators was proposed. Forecast accuracy of the proposed model to forecast exchange rates volatilities was compared with GARCH family models and hybrid GARCH and ANN model. The choice of a suitable ANN training algorithm for networks predicting financial time series was studied in the paper Chandar, Sumathi, and Sivanandam (2015). The authors investigated the performance of ANN models with five learning algorithms and they reported high prediction accuracy of ANN models with Levenberg-Marquart training algorithm. Several authors focused on using hybrid models to increase the accuracy of their predictions. High prediction accuracy for nonlinear data was achieved with a hybrid model consisting of ARMA model, exponential smoothing (ES) model and recurrent neural network (RNN) (Rather, Agarwal, and Sastry, 2015). The hybrid model based on Support Vector Machine, Radial Basis Function, and two ANN's variants Single Layer Perceptron and Multi-layer Perceptron were proposed by Usmani, Adil, Ebrahim, and Raza (2018). The authors reported, that the combination of four machine learning techniques, is a suitable tool for forecasting the stock market behaviour. The aim of this paper is to predict stock indices using dynamic neural networks and to analyse the predictive ability of networks with different architecture and a different number of time delays.

2 Artificial neural network

ANNs, one of the soft computing methods, represent a massive parallel computing system capable of processing data containing inaccuracies, uncertainties, and noise. Pattern recognition, data recognition, image processing, stock market prediction, weather prediction, image compression, and security and loan applications were referred to neural network applications in Ibrahim (2016). The inspiration for the ANN is the human brain and its ability to learn. Learning capability enables neural networks to improve their performance and achieve accurate results. ANN consists of neurons that are simplified models of biological neurons with similar structures and functions. Neurons process the information with an activation function and

transmit it via oriented weighted connections. Connected neurons are organized into layers – input layer, hidden layer, and output layer. They differ in the sources of their inputs and in the use of their outputs. The input layer processes the data of the independent variables that are inputs to the ANN and transmits it to the next network layer. Hidden layers process outputs from previous layers and transmit them to the next layer. The output layer processes the outputs of the previous hidden layer and gives the value of the dependent variable as an output (Parot, Michell, and Kristjanpoller, 2019, Yildirim, 2019). A multilayer feedforward neural network with input layer, one hidden layer, and output layer is shown in Figure 1. The signal proceeds through the network through directed connections in one direction – forward. Dynamic networks, unlike static feedforward networks, use not only the current inputs of the network but also the previous inputs and outputs to calculate the output of the network. These feedback connections allow the network to store information for further use (Mahmud and Meesad, 2016).

Figure 1: Architecture of the multilayer neural network.



Source: Elaborated by the authors.

The learning process of an ANN is done by adjusting the connection's weight values and neuron threshold values (θ). The adjusted weights of the neural network connections store acquired knowledge. Several learning laws can be applied to the neural network training process. In this study, we use Levenberg-Marquart learning algorithm, which is a variation on Backpropagation algorithm. In Li, Cheng, Shi, and Huang (2012) the Backpropagation algorithm was described in two steps. In the first step, the operating signal is propagated forward through the network layers. The error signal is computed as the difference between the real and the expected output. In the second step, the error signal is back propagated through the network. The weight values and threshold values are adjusted using the gradient descent method to minimize the error signal and therefore optimize the network performance. The disadvantage of the Backpropagation algorithm is its slow speed of convergence. To speed up the convergence, there are several variations of Backpropagation such as Levenberg-Marquart, Scaled Conjugate Gradient Descent, Quasi-Newton, One Step Secant, Variable Learning Rate Backpropagation, etc. For ANN with less than a few hundred weights, Levenberg-Marquart is the fastest converging learning algorithm (Shahbazi, Memarzadeh, and Gryz, 2016). In the study Chandar, Sumathi, and Sivanandam (2015), the best prediction of the foreign currency exchange rate was achieved with ANN trained with Levenberg-Marquart learning algorithm.

The Levenberg-Marquart learning algorithm combines the gradient descent method and the Gauss-Newton method. The non-linear function is minimized with a numerical solution (Gavin, 2019). According to Yu and Wilamowski (2011), the learning rule of Levenberg-Marquart learning algorithm is given by:

$$w_{k+1} = w_k - (J_k^T J_k + \mu I)^{-1} J_k e_k, \quad (1)$$

where w_{k+1} and w_k are components of wight vector w ; μ is a combination coefficient with positive value; I is the identity

matrix; e_k is a vector of training errors defined as $e_k = y_k - \widehat{y}_k$, where y_k are target values and \widehat{y}_k are output values; J is the Jacobian matrix defined as:

$$J = \begin{bmatrix} \frac{\partial e_{1,1}}{\partial w_1} & \frac{\partial e_{1,1}}{\partial w_2} & \dots & \frac{\partial e_{1,1}}{\partial w_N} \\ \frac{\partial e_{1,2}}{\partial w_1} & \frac{\partial e_{1,2}}{\partial w_2} & \dots & \frac{\partial e_{1,2}}{\partial w_N} \\ \vdots & \vdots & \ddots & \vdots \\ \frac{\partial e_{1,M}}{\partial w_1} & \frac{\partial e_{1,M}}{\partial w_2} & \dots & \frac{\partial e_{1,M}}{\partial w_N} \\ \vdots & \vdots & \ddots & \vdots \\ \frac{\partial e_{P,1}}{\partial w_1} & \frac{\partial e_{P,1}}{\partial w_2} & \dots & \frac{\partial e_{P,1}}{\partial w_N} \\ \frac{\partial e_{P,2}}{\partial w_1} & \frac{\partial e_{P,2}}{\partial w_2} & \dots & \frac{\partial e_{P,2}}{\partial w_N} \\ \vdots & \vdots & \ddots & \vdots \\ \frac{\partial e_{P,M}}{\partial w_1} & \frac{\partial e_{P,M}}{\partial w_2} & \dots & \frac{\partial e_{P,M}}{\partial w_N} \end{bmatrix}, \quad (2)$$

where N is a number of weights, M is a number of outputs and P is a number of patterns.

Considering the dependence of the financial time series values on its previous values, it is appropriate to use dynamic neural networks for its prediction. In this study, a nonlinear autoregressive network based on a linear autoregressive model (AR). The architecture of NAR network consists of feedback connections and tapped delay lines (TDL). The TDL unit returns a vector consisting of input data from the current time-step to the required number of time delays (Stokes and Abou-Zaid, 2012). When using supervised learning, the actual previous values of the time series are known and can be used to replace the feedback connections. After modification of the network to feedforward architecture, static Backpropagation in the network training process can be used, which reduces the time required for calculations. After training of the ANN, it is possible to iterate the prediction of several time steps ahead using the original network architecture containing the feedback connections. Leaving a purely feedforward architecture, the network would be able to predict only one-step-ahead. Equation (3) is the definition of the NAR model (Shahbazi, Memarzadeh, and Gryz, 2016).

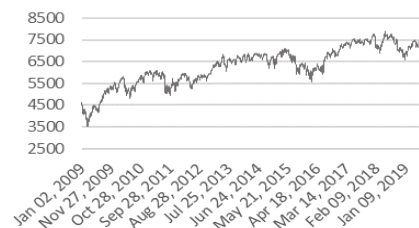
$$y(k) = F(y(k-1), y(k-2), \dots, y(k-d)), \quad (3)$$

where $y(k)$ is the value of the financial time series at time k and d is a number of time delays.

3 Methodology and data

The analysis is conducted by examining the accuracy of the prediction of the stock index Financial Times Stock Exchange 100 Index (FTSE 100). The stock index consists of 100 companies with the highest market capitalisation listed on the London Stock Exchange. The robust model is developed by using historical prices from January 2, 2009, to August 30, 2019, which represents 2693 values. The tracking period is shown in Figure 2.

Figure 2: FTSE 100 prices from January 2, 2009, to August 30, 2019.



Source: Elaborated by the authors based on data from <https://www.investing.com/indices/uk-100-historical-data>.

To simplify the problem of the outliers in the network, normalisation of the network's input data was proposed by Shahbazi, Memarzadeh, and Gryz (2016). We normalise the prices of FTSE 100 stock index according to Markechová, Stehlíková, and Tírpáková (2011):

$$U = \frac{X - \mu}{\sigma}, \quad (4)$$

where U is the normalized variable, X is the original variable, μ is the mean value of the variable and σ is the standard deviation of the variable. After pre-processing, we divide the data into training set, validation set and testing set in a ratio 70:20:10.

The models are constructed in the MATLAB R2019b software. To predict the stock index, we develop and validate NAR networks with tansig transfer function and Levenberg-Marquadt learning algorithm. The network architecture is optimized using different numbers of the hidden layer's neurons and different number of time delays. We construct networks with the time delay from 1 to 10 days and 5, 10, 15, 20, 25, 30 neurons in the hidden layer for each value of time delay. We construct, train, validate and test 60 neural networks. To evaluate the network performance, it is possible to use the determination coefficient (R^2), the mean square error (MSE), the root mean square error ($RMSE$), the mean absolute error (MAE) and the mean absolute percentage error ($MAPE$).

$$R^2 = 1 - \frac{\sum_{i=1}^n (y_i - \hat{y}_i)^2}{\sum_{i=1}^n (y_i - \bar{y})^2}, \quad (5)$$

$$MSE = \frac{1}{n} \sum_{i=1}^n (y_i - \hat{y}_i)^2, \quad (6)$$

$$RMSE = \sqrt{\frac{\sum_{i=1}^n (y_i - \hat{y}_i)^2}{n}}, \quad (7)$$

$$MAE = \frac{1}{n} \sum_{i=1}^n |y_i - \hat{y}_i|, \quad (8)$$

$$MAPE = \frac{100}{n} \sum_{i=1}^n \left| \frac{y_i - \hat{y}_i}{y_i} \right|, \quad (9)$$

where n is the number of data points, y_i are target values, \hat{y}_i are output values and \bar{y} is the mean of target values.

In the study, we use the MSE as a measure of the quality of network performance. The MSE includes the variance of the predictor and its bias.

4 Results and discussion

For constructed neural networks, the MSE values are calculated for training, validation and test data set and for the whole data set. When selecting the network with the best prediction ability, we take into account the MSE values for the validation data set as proposed by Moghaddam, Moghaddam, and Esfandyari (2016). The networks with the most accurate predictions for each value of time delay are listed in Table 1.

Tab. 1: MSE values for constructed networks with different architecture

Time delays	Hidden neurons	MSE			
		Train	Valid	Test	All
1	20	6.13393E-03	4.28847E-03	3.95746E-03	5.54718E-03
2	25	6.24435E-03	3.67726E-03	4.09539E-03	5.51659E-03
3	20	6.25611E-03	3.76361E-03	4.26495E-03	5.55876E-03
4	5	6.27595E-03	3.89500E-03	4.70441E-03	5.64261E-03
5	30	5.88020E-03	4.27361E-03	5.23377E-03	5.49410E-03
6	5	6.12434E-03	4.21384E-03	4.56855E-03	5.58627E-03
7	20	6.09874E-03	4.18674E-03	4.48561E-03	5.55513E-03
8	30	5.78057E-03	4.22786E-03	5.72543E-03	5.46463E-03
9	20	5.56488E-03	4.05982E-03	4.25169E-03	5.13231E-03
10	5	6.11457E-03	4.07677E-03	4.75840E-03	5.57145E-03

Source: Elaborated by the authors.

The minimum MSE value for the validation data set has the NAR network with 2 days time delay and 25 neurons in the hidden layer. The data in Table 1 suggests that higher prediction accuracy is achieved by networks with a lower number of time delays. Setting the optimal network architecture and number of time delays needs to be adapted to each financial time series.

5 Conclusion

Neural networks are often referred to as a black box because we cannot know the internal structure of the system in detail. We put only a few assumptions on the internal structure of the system, which is modelled by the black box, which will make it possible to describe the behaviour of the system by a function that does the input-output transformation. Neural networks are useful when coincidence plays a significant role in the modelling process and where deterministic dependencies are so complex and interconnected that we cannot separate and analytically identify them. They are therefore suitable for modelling complex, often irreversible, strategic decisions. The characteristics of ANNs predetermine them for the analysis of financial time series, which is also confirmed by the results of the performed analysis. The dynamic NAR network with a lower number of time delays is proven to be a suitable tool for predicting the FTSE 100 stock index.

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Primary Paper Section: A

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EDUCATION FOCUSED ON ECO-LITERACY – THE WAY TO TRANSFORM THE ECONOMY ONTO A SUSTAINABLE

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Abstract: Modern civilization threatens the earth's nature, but also itself, and thus sustainability, resp. sustainable development has also becoming a challenge for education and training. Based on the explication of the reasons evoking the need to transform the economy onto a sustainable, the paper pays the main attention to eco-literacy, which is one of the components of education for sustainable development. Its aim is to justify, through the theoretical research, that, especially at schools that prepare experts for practice in the economic sphere of society, the education should, among other things, focus on the eco-literacy of future graduates. Such education is presented as an important component of education for sustainable development but mainly as a way to transform the economy onto the sustainable in accordance with the main objective of sustainability. It should be based on a value reorientation of human, society and civilization, on a holistic perception of changed economic reality, and respect the laws of the real world and nature. In addition, the paper outlines what the education aimed at eco-literacy of subjects in the economy should include and last but not least it emphasizes and justifies the need for its implementation in education in those educational institutions that prepare future experts in the field of economy. In conclusion, the expected contribution of this education to the development of the sustainable economy but also to the whole society and culture is pointed out.

Keywords: Eco-literacy, economy, education for sustainable development, nature, sustainability, transformation.

1 Introduction

In connection with new global conditions in the world, several negative phenomena and processes have been emerging that ultimately endanger the lives of people in the contemporary world. Global environmental changes have been going on over the past decades with increasing intensity and dynamics, and besides the exponential growth of human population we are putting them into the context with economic development in the new global environment. In this environment, there is a growing conflict between human and nature, ecological and environmental problems and crises have already obviously acquired a global dimension, while the sustainable development on Earth is endangered.

Economic subjects are largely responsible for this situation. Thanks to their one-sided orientation towards economic goals and welfare raising, they are not able to approach responsibly toward the nature and other non-economic values, which is resulting in the global environmental changes, in destruction of life conditions on the planet, and overall – the state and quality of life on Earth is getting worse. New threats and crises in the world confirm that actual humanity's way of life is unsustainable. Modern civilization threatens earthly nature but also itself and thus the motto of the present and, at the same time, the challenge is sustainability, resp. sustainable development.

This challenge is addressed not only to economists and others in the economic sphere of society, but also to politicians, philosophers, and other experts including those in the educational sector. Among other things, they are expected to be able to prepare graduates adequately to take responsibility for decisions and actions that concern both society and nature, and the environment. And also that graduates will be able to face the current challenges and threats in the world successfully. The task of education and of the educational systems is to contribute to the ensuring sustainable development through education for sustainability (besides the term Education for Sustainable Development, the term Education for Sustainability is used too). Especially of those educational institutions that are focused on preparing future professionals for the economic sector, it is expected that Education for Sustainable Development (ESD) will be also aimed at eco-literacy, which we consider as one of the ways to transform the economy onto the sustainable.

2 Materials and Methods

The study comes from explication of the main causes and reasons behind the need to transform the economy onto the sustainable, and likewise, it determines the framework for developing the sustainable economy and society. It points out that the emergence and persistence of global problems and crises can also be linked in a certain manner to the fact that people, including those acting in the economic sphere, do not sufficiently understand the demand for sustainable development (the professional public has been using the term “sustainable development” and also “sustainability”). This idea of linking the environment and development was settled at the United Nations Conference on Environment and Development in Rio de Janeiro 1992, which started a serie of UN international conferences. Agenda 21 and many other documents were gradually created there (Mravcová, 2018)), which constrain them from being responsibly involved in this. Thus, the stated causes and reasons are becoming the impulses for education and indirectly encouraging them to give an appropriate attention to ESD, whereby at schools that train professionals in the economic sphere of society this education should be focused also on eco-literacy.

In the first part of the paper, we outline the values on which the current society and the economy are based, as well as those on which the sustainable society and a model of sustainable economy should be based. It is concerned to the same values that ESD should focus on, which invoked the need to implement some of the changes especially into the education of future economic experts. These changes, among other things, also involve the education tools for sustainable development and thus also the eco-literacy, to which our paper pays the main attention. We point out how eco-literacy helps to transform the economy onto the sustainable and develop it in accordance with the main objective of sustainability, which means – synchronizing economic development with nature and environmental protection.

3 Transforming the economy onto the sustainable and the need for changes in the education

The current economic development is considered unsustainable especially because in order to maximize human well-being there is an excessive burden on nature. From own point of view, several authors of philosophical, sociological, cultural, and economic studies point to this fact (for example, Meadows et al., 1972; Lipovetsky, 2007; Juvin & Lipovetsky, 2012; Sen, 2002; Šmajš, 2006; Špirko, 1999; Huba, 2004, etc.). According to them, development of the economy in the new global environment has devastating effects on the Earth's ecosystem and especially on its biosphere, which ultimately endangers also human. The current economy, which is the dominant subsystem of culture, can be therefore denoted as anti-natural, insufficiently compatible with the environment.

A paradigm of sustainable development (SD) creates frameworks for the development of sustainable economy and society. This paradigm is considered to be a global development paradigm, but also a project for reconciling economic and social development with the requirement of environmental protection (the best-known definition of SD is represented in the Brundtland Report (World Commission on Environment and Development, 1987)). This paradigm includes a long-term and global perspective that integrates components – the goals that need to be achieved (social progress, effective environmental protection, responsible use of natural resources, and maintaining the high and stable level of economic growth). The SD project shall ensure the harmony among human and nature, among society and its environment, so that we are as close as possible to the ideal of humanism and respect for life and nature in all its forms (an important contribution to ensuring SD represents the

Agenda 21, adopted in 1992 at the Earth Summit in Rio de Janeiro. It represents the philosophy of further existence of humanity and all living organisms on Earth in a harmonious balance (United Nations Sustainable Development, 1992)). The main goal of sustainability is considered to be the synchronizing of economic development with nature and environment protection. But the transformation of economy onto the sustainable is shaping as an important condition also for preventing the deepening of existing global problems, risks, and crises in the world, as well as overall for ensuring a quality life on Earth.

The model of sustainable economy is based on the awareness of the value of nature as a whole, of natural entities, and also of processes – so the values „themselves“ – independently of the consciousness or economic evaluation of natural entities in all spheres and in every human activity. Sustainable economy shall focus on long-term ensuring of quality of life for the present generation as well as for future generations, while maintaining a considerate approach to the nature and to our entire planet. We agree with the opinion of H. Henderson (2001), the representative of the Theoretical School of New Economy, that the understanding of complexity of the global economy requires systemic approach as well as a shift from the economic approach to the multidisciplinary one. This also holds for the process of transformation of the economy onto the sustainable. Such transformation of the economy and ensuring equilibrium between society and nature assumes number of changes also in the education of future economic experts, which requires the involvement of such disciplines as philosophy of education, pedagogy, ethics, and some others into this process. From the point of view of these disciplines, transforming economy onto the sustainable requires offering young people, who are being prepared for practice in this social sphere, such education that would enable to improve the state of the ecosystem and, overall, to ensure the sustainable life on Earth. At the same time, the current paradigm dominating in education is “education for profit“, which does not bring the higher level of education in the society. M. Nussbaum, the author of the book “Not for Profit: Why Democracy Needs the Humanities” (2010), highlights this fact (in this book which is considered to be the current philosophy of education, the author criticizes education „for profit“ limited to three basic skills: reading, writing, and counting while thinking (political, social, and environmental) is considered to be pointless and becomes an obstacle of economic growth (Nussbaum, 2010)). In this book, Nussbaum focuses the critical point of view on the current level of education and overall education in the world, and she states that economic changes do not bring the higher level of education to the society by themselves. She also combats the opinion that the education is primary the tool for economic growth. She argues that economic growth may not automatically lead to the better quality of life. As, for example, the achievements in health care and education only weakly correlate with economic growth of the society. In this context, she justifies the need to devote broader attention to humanities and social sciences which have been gradually disappearing from universities (Nussbaum, 2010). The reason is their inefficiency for economic profit. The paradigm “education for profit“, criticized by Nussbaum, is not being shown as the right one, regarding the negative influences of economics toward social, cultural, ecological, and other conditions in the new global environment where current people live. It is not correct to teach just about the functioning of global economy, increasing of economic growth, and other positive indicators without remembering the consequences of these processes on inhabitants or nature. She indirectly encourages the change in education, which should lead to a more responsible approach to these values and overall, to sustainability.

However, the leading Slovak economist, M. Šikula calls more openly for making changes in education, noting that although some forms of education for sustainability are implemented in our education system, we are meeting the opinion that the shift in environmental thinking and acting of generations is much slower in comparison with the worsening of global conditions on Earth. He sees the cause in missing education for global

environmental sensitivity while environmental experts' thoughts, challenges, and warnings remain unnoticed, often questioned, and ironized. At the same time, he states: „There are no conditions that would force and motivate entrepreneurial subjects, governments, citizens, politicians, and protectionists to work together in a coordinated way to create the preconditions for sustainability of life“ (Šikula, 2003, pp. 260 – 261).

However, the mentioned authors and also some others point to the fact that current education is focused mainly on strengthening the economic rationality of young people, which leads to the efforts to pursue mainly economic interests or to increase technological progress. Unfortunately, other values that are important for people's lives and overall for the preservation of life on Earth, are in the background.

As S. Kumar (2004) states, regarding the hope for the future of humanity and Earth, the revitalization of education has become an urgent task. Kumar looks critically at the contemporary educators for started being „servants“ of the economy, ignoring the catastrophic consequences for people and the planet. Similarly, for example, J. Šmajš emphasizes the need to reform traditional education, as it deepens the current crisis. He is convinced that the new leading idea must be „a gentle rental relationship between culture and Earth“ and, in accordance with this idea, it is necessary to offer the young generation such education that „awakens new geocentrism and recognizes the Earth as the natural home of all living systems, including human“ (Šmajš, 2008, p. 61).

Regarding the accumulating ecological and environmental problems, risks, and crises in the world, threatening the sustainability of life on Earth, where economic subjects are considerably involved, we consider similar incentives for making changes in education as justified.

4 Eco-literacy as component of education for sustainable development

Regarding the need to ensure sustainable development, the need to make changes not only in politics and in other sectors, among them in the education, has long been demonstrated. It is important to continue in these efforts which, besides the above-mentioned challenges, result also from several international documents (for example, from Tbilisi Declaration UNESCO/UNEP, 1978), Agenda 21 (United Nations Sustainable Development, 1992), 2030 Agenda (United Nations, 2015). UNESCO reports also note that education plays an important role in implementing the changes needed to move towards sustainability (see more, for example, in (UNESCO, 1997; UNESCO, 2002; UNESCO, 2017; UNESCO, 2019a; United Nations, 2015, etc.)). The Education for Sustainable Development Program has been developed to ensure the sustainable future. Its implementation in education should provide specific cognitive, socio-emotional, and behavioral educational outcomes that enable individuals to become familiar with the challenges that result from the Sustainable Development Goals (SDGs) and achieve them (ESD is considered as a key instrument to achieve the SDGs (UNESCO, 2017)). „In short, ESD enables all individuals to contribute to achieving the SDGs by equipping them with the knowledge and competencies they need, not only to understand what the SDGs are about, but to engage as informed citizens in bringing about the necessary transformation“ (UNESCO, 2017, p. 8).

We incline to the opinion that the highest priority of education for sustainability should be the raising of public awareness about the need to move towards the sustainable social system and exploring the means of achieving this (Orr, 1999). These are the tasks mainly for politicians and professionals in education. According to UNESCO, education, in line with the challenges of the 21st century, has the duty to promote the right types of values and skills that will lead to sustainable inclusive growth and peaceful coexistence. UNESCO participates in supporting the country's capacity-building for sustainable development education, in developing and expanding actions focused on key

issues solving (climate change, biodiversity, disaster risk reduction, respect for cultural diversity, sustainable urbanization, sustainable lifestyles, etc.) in order to improve an access to quality education about sustainable development at all levels, and in all social contexts help people to develop the knowledge, skills, values and behavior required for sustainable development (UNESCO, 2017). This education should be addressed to all people without distinction. As it is stated, „education for sustainable living is an enterprise that transcends all our differences of race, culture, or class. The Earth is our common home, and creating a sustainable world for our children and for future generations is our common task“ (Capra, 2004, p. 9). As the objectives of this education involve everyone equally, everyone has the same duty at the same time – seek to sustainable development.

One of the tools of ESD is environmental education which goal appears from the Tbilisi Declaration (according to this document, the primary objective of such education is considered to be providing the opportunity to acquire knowledge, values, attitudes, intention, and skills needed to protect and improve the environment. This Declaration connects environmental education with people's responsibility for the state of environment and encourages to its protection (UNESCO/UNEP, 1978)). Its task is to help people understand the natural world, become critical thinkers and active participants who are well aware of how economic and social needs affect ecological relationships in their own communities. Environmental education responds to the increasing need to build environmental awareness and increase the environmental erudition. It is determined as a process of lifelong learning, based on which environmental principles are being acquired. It shall lead to the development of responsibility for preserving and improving the quality of the environment and its components, thereby preventing the emergence of global or local environmental problems (Enviroportál, 2018). In primary and secondary schools, it is understood as an organic part of the whole education and training complex. Its role is to develop mainly the relationships between human and the environment with the emphasis on balanced functioning of social and natural factors.

Besides the environmental education, we meet also some other concepts, types, or tools of education in societies, that are focused on sustainable development. All of them indicate in some way the need to leave the existing model of industrial development of society (an important impulse for the searching of starting points from the crisis of industrial system have been the Romanian Clubs Reports since the year 1972, which point to the need to move away from the industrial model of society's development) and to transition to the alternative sustainable economic model (new alternative economic theories show evidence of that the current world economy is gradually adapting to the changing civilization paradigm, the paradigm of sustainable development. In addition to the above-mentioned Henderson's Theoretical School of New Economy it is, for example, ecological economics, bioeconomics, green economy, and others. These are alternative sustainable models that, together and in interaction with each other, seek to improve the environment on Earth (see more, for example, in Klinec, 2002). These include mainly Sustainable Education, Global Education, Development Education (see, for example, ReliefWeb, 2016; etc.), Global Citizenship Education (see, for example, UNESCO, 2015, UNESCO, 2019b, Mravcová, et al., 2017; Mravcová, et al., 2018; etc.), which in some ways try to implement the global and European dimension into the process of education, and so prepare future school graduates more comprehensively for responsible acting in the new global environment. For that to become active supporters of more peaceful, tolerant, inclusive, safer, and more sustainable society. Equally important concept or tool of ESD is eco-literacy.

The Center for Eco-literacy has been paying attention to the education for sustainability which is based on ecological principles, since its foundation. The two of its members – F. Capra and M. K. Stone (Capra is a co-founder of this Center in California, that is a key organization promoting eco-literacy

within the education) – stated, that we celebrate sustainability which is much richer concept than simple satisfying of material needs, persisting or trying to keep the conditions on the still worsening planet (Capra & Stone, 2010). According to them, in the sustainable community not only economic growth or the competitive advantage is sustainable but the whole network of life, natural and social, from which our long-term survival depends. Truly sustainable community is alive – functioning, vital, evolving, diverse, dynamic. It promotes the health and quality of life of present and future generations, although it lives within its social and natural systems. It recognizes the need for justice as well as physical, emotional, intellectual, cultural, and spiritual nutrition. Sustainable education allows the obtaining of ecological literacy (Capra and Stone do not distinguish between concepts “ecological literacy” and “eco-literacy”, but some other authors specifically define in their studies the framework for environmental literacy, ecological literacy, eco-literacy and compare these frameworks across multiple dimensions of impact, knowledge, skills, and behavior (see more in, for example, McBride et al., 2013), from which the survival of humanity depends in the subsequent decades. More specifically, it is about gaining the ability to understand the basic principles of ecology, values and gain moral strength (McBride et al., 2013). This education is also determined as a change in the culture of education that develops and critically-consciously personify the theory and practice of sustainability. It is covered by the transformation paradigm that evaluates, maintains, and implements human potential in relation to the need to achieve and maintain social, economic, and ecological well-being (Sterling, 2008, p. 22).

Eco-literacy is also considered as a logical component of education for sustainability. For example, Locke et al. consider as tool of ESD also eco-literacy, besides the environmental education. It promotes the development of values, knowledge, skills, and activities that are needed to create the sustainable economy and the whole world in which the environment is maintained, and in which social justice and economic sustainability is supported. It focuses on the interactions of various elements in the environment, including human activity, necessary for the achievement of a self-governing community that shall preserve resources for future generations (Locke et al., 2013). Finally, the fact that sustainable development is the goal of environmental education and also of eco-literacy was agreed by the UN General Assembly in 1987. Until today, UNESCO is promoting ESD with the focus on providing learners with some competencies to achieve the goal – sustainable development (see more in, for example, UNESCO, 2002; UNESCO, 2017).

Capra, who proposed the concept of eco-literacy (however, as it is stated, the idea of literacy which emphasizes the creation of sustainable human communities and in this context it emphasizes the need to fundamentally reconstruct the entire education system, has already been developed by D. W. Orr (see more in Cutter-Mackenzie-Knowles & Smith, 2003). Capra leaned on his works when he introduced the word eco-literacy and described this new educational framework based on the holistic approach to the development of learners Mitchell & Mueller, 2011; Semetsky, 2010; Stanger, 2011), believes that all the wisdom that we need for sustainable life is, in his opinion, encoded in the “language of nature” and the dignified life of human depends on how he/she learns to decipher it. Human should learn to speak the “language of nature” and, at the same time, to imitate natural processes through his thinking and action (Klinec, 2010). Not only according to Capra (1997a; 1997b) but also according to some others (Orr, 1992; Kohák, 1998; Klemow, 1991; Cutter-Mackenzie-Knowles & Smith, 2003; Nečas, 2006; Nichols, 2010; McBride, 2011, etc.), the eco-literacy is linked to capabilities or competences that enable people to understand the relationship of nature and society, to experience the belonging to the nature and to the whole human society. The idea of using resources in such the way as to ensure their accessibility also for future generations is considered as the basis of eco-literacy (McBride et al., 2013).

Capra and Stone are convinced that the eco-literacy must become one of the essential characteristics of politicians, executive workers, and professionals in all spheres, as well as the most important part of education at all levels – from primary and secondary schools to universities, including continual education and training of professionals. As stated, everyone, including economists, managers, etc., should simply be inspired by societies that have been maintained for centuries. These are the nature ecosystems that are the sustainable communities of plants, animals, and organisms (Capra & Stone, 2010). Thus, also the training of professionals for society, and also for the market and economy, must include education for sustainability with the aim of shaping and strengthening their eco-literacy, which is the prerequisite for achieving economic goals in the sustainable way, and also the prerequisite for transforming the economy onto the sustainable. It should be implemented at all school levels, without the exception of area in which their graduates shall operate.

Capra (1997a) is convinced that eco-literacy will form the basis of our economic systems and social institutions, and will also have a profound impact on the education system in the 21st century in which it will play an important role, while he is adding that if it is not, there will be no future of humanity, by what he clearly underlined the importance of eco-literacy for sustainability. In his lecture “Eco-literacy – the challenge for education in the next century”, he said that at the end of 20th century and at the beginning of new millennium, the survival of mankind will depend on our ability to understand ecological principles and, consequently, on that how human will be able to structure human communities in accordance with these principles. According to Capra, the ecological principles can be simply called as “the basic facts of life”, sustainability principles, or community principles while adding that the curriculum of education should also be based on them. The principles of sustainability should be the bearing principles for shaping sustainable learning communities as well as economic systems.

Capra and Wolfe noted that society’s guiding principles provide the framework to eco-literacy that is appropriate for health and forming of sustainable communities. Their aim is to ensure that human activity and technologies do not disrupt the natural capability of life-sustaining ecosystem (see more in Capra 1999; Wolfe, 2001).

As Capra states, eco-literacy must be based on educational process that involves developing learners’ skills. Components of the conceptual framework can be summarized as follows: (1) understanding of ecological principles, their acquaintance in nature and thus adoption of the sense of place; (2) incorporating of views from the new concept of learning that emphasize that children are searching for patterns and meanings; (3) applying environmental principles in the education of the learning community, facilitating the emergence of new structures and shared leadership; (4) integrating the curriculum through project-based teaching. At the same time, Capra emphasizes that, thanks to the intellectual grounding in system thinking, “eco-literacy offers a “powerful framework” for system approach to educational system reform” (Capra, 1997a, p. 4).

Understanding of ecological principles and principles of life is the common task for creating sustainable world. It involves all races, sex, or social statuses. This task brings together all people on Earth. Therefore, the education for sustainability has become the necessity. As Kumar states: “Education as usual’ is no longer an option” (Kumar, 2004, p. 3). Regarding the fact that the majority of schools and universities prefer materialistic and consumeristic goals for the promising future of humanity and Earth, we need the urgent renewal of education. The problem, however, consists in the fact that the current educators have become “servants” of the economy and have little regard for its catastrophic consequences for people and the planet. Kumar therefore expresses the hope that this vision of eco-literacy will attract the attention of educators and inspire them to make education relevant to the “age of ecology” (Kumar, 2004).

5 Education for eco-literacy – the path to the sustainable economy

As mentioned above, eco-literacy, like other concepts, types, or tools for sustainable development education, helps to move towards the sustainable society and also to establishment of sustainable economic model. Regarding the need to develop sustainable economy, Capra emphasizes that sustainable society must strive for economic growth and development, but at the same time it must be built in such way that the life, business, economy, physical structures, and technologies do not get into the disagreement with the fundamental ability of nature to preserve life. He states that the economy is today creating a conflict in all areas and so it is needed to propose a new conceptual framework for economic theory and practice which is based on the systemic principles of life. It is systemic thinking that, according to him, forms the intellectual core of eco-literacy, so the conceptual framework enabling combine its various components, respectively competencies (Capra & Jakobsen, 2017). Together with the colleagues at the Center for Eco-literacy they have determined four competences for eco-literacy: (1) head/cognitive – approach issues from a systems perspective, understand fundamental ecological principles (networks, nested systems, cycles, flows, development, dynamic balance), think critically, assess impacts and ethical effects of human actions, envision long-term consequences of decisions; (2) heart/emotional – feel concern, empathy, and respect for other people and living things, appreciate multiple perspectives, commit to equity and justice for all people; (3) hands/active – create and use tools and procedures required by sustainable communities, turn convictions into practical and effective action, assess and adjust uses of energy and resources; (4) spirit/connectional – experience wonder and awe toward nature, feel reverence for the Earth and all living things, feel a strong bond with and deep appreciation of place, feel kinship with the natural world and invoke that feeling in others (see in McBride at al., 2013; Mitchell & Mueller, 2011; Stone, 2010). Thanks to them, human as an effective member of sustainable society should feel the belonging to the nature and society, express respect for people and nature, and have responsible approach to them.

According to Capra, eco-literacy is only the first step towards sustainability. The second step is the so-called “ecological design”. We must apply our ecological knowledge to the fundamental redesign of our technologies and social institutions to overcome the difference among human design and ecologically sustainable nature systems.

Eco-literacy and eco-design are based on ecological networks and material flows. The principles of ecological design reflect the principles of an organization which has been developed by nature to maintain the network of life. Design in such context requires a fundamental shift in our attitude towards the nature – the shift from finding out what we can get from the nature to what we can learn from it. Similarly, it is necessary to move from a product-oriented economy to a ‘service and flow’ economy, where industrial raw materials and technical components constantly alternate between producers and users (Capra, 2018). This is also the way to transform the economy onto the sustainable. Eco-design assumes the merging of several industries into the single chain, so that the waste of one industry becomes the starting stock for another industry (this principle is based on the new sustainable economic model – *Sustainable Economics*, which belongs among the so-called “green” initiatives. It is the model that replicates nature – waste from one system serves as a livelihood for another – and it is powered by renewable energy sources (Huba, 2003). And also the sustainable economic model – *Circular Economy*, based on the sharing or borrowing things that are reused, repaired, and recycled as far as possible. After the end of products’ life, the materials from which they were made are used to produce new products). However, the step into such a path requires proper evaluation of values, establishment of environmental values and

some other values compatible with the sustainable way of living in economics and also in concrete activities in the economy.

Eco-literacy as well as ecological and environmental literacy of subjects (we are meeting the opinion that the eco-literacy framework shows high degree of similarity especially with environmental literacy, as both concepts contain similar affective knowledge, cognitive skills, and behavioral components (see more in McBride et al., 2013; Roth, 1991; Orr, 1992; and others) in the economy should be based on the value reorientation of human, society, and civilization, thus on the holistic perception of the changed economic reality and respect for laws of the real world and nature. This is an important precondition for transforming the economy onto the sustainable. Until now, the subjects in economy have obviously been guided mainly by economic logic in their activities and thus they preferred economic values. Finally, the values and value orientations of people are considered to be the most important and also the most problematically defined attribute of heading the sustainability (Huba, 2006). (In addition, competences are considered as an important component of ESD and, in particular, of eco-literacy. For example, it is stated that education for eco-literacy is aimed at acquiring individual knowledge and competences needed to overcome environmental problems and to develop sustainable society that does not destroy the ecosystem (Barnes, 2013)).

Capra also emphasizes that in the 21st century the challenge is to change the value system to be compatible with ecological sustainability requirements. Education for sustainability, focused on the eco-literacy of subjects in the economy, must pay the appropriate attention to shaping the value orientation of subjects in the economy, that are deciding about the ways, forms, and level of satisfaction of the needs of people on Earth, about their dissemination and so on. Together with economic values, they must take into account the value of ecosystem and thus responsibly consider the limits of resources drawings, and take responsibility for initiatives that lead to production and profit growth but also to consumption growth. As Capra points out, not only economic growth or development, market share or competitive advantage but the whole "web of life" from which our long-term surviving depends, is sustainable in the sustainable community. Such community is shaped, so that its paths of life, trade, economy, material structures, and technologies do not interfere with the natural ability of nature to preserve life (Capra, 1997b). It is at least required that, thanks to sustainable education focused on eco-literacy, the subjects in economy can correctly understand the values of nature and culture, their relationship as well as the relationship of nature to the subsystems of culture (technology, economy). This is the basic prerequisite or the first stage of ESD heading to eco-literacy. More specifically, in the educational process this can be achieved through philosophy (especially axiology and ontology) and also through ethics. We agree with the opinion that: "Without the ontological dimension of ecological problem, moral attaching, and axiological status of natural entities, the social necessity for processes that need to be done to preserve the environment as an inevitable life need for humans and all living beings on the planet, would not be obvious and probably not feasible" (Smolková, 2000, p. 110). According to J. Šmajš, it is necessary to offer for the current generation such education that enables it to understand the absolute priority of life, the compatibility of culture with nature. In particular, understanding the value of nature as an existential value (according to H. Rolston, the values contained in nature are important to be considered as existential and, at the same time, it is important to understand that the existence of nature as a whole, its lower layers, enables existence of the "humane" layer, which at the same time requires human's responsibility for himself and also for the system as a harmonious entity (for more details see Rolston, 1989) is seen as the starting point or basis on which the eco-literacy of subjects in the economy must lean and thus also their responsible approach to nature, environment, and ultimately to themselves. Consequently, the purpose of this education is that students shall understand the causes of cultural anti-naturality and thus also the anti-naturality of the economy, which is now becoming a categorical imperative of human survival. It

shall awake the new geocentrism and accept Earth as natural home of all living organisms, including human (Šmajš, 2008). Eco-literacy oriented education for sustainable development must include, among other things, knowledge demonstrative that the economy is the subsystem of culture which is dependent on nature. This implies that all values, including those created by human, whether by intentional or unintentional activity, and therefore also the economic values, must be assessed in the light of natural values.

6 Conclusion

Development of economy in the global environment is associated with the threat to nature, environment and ultimately it endangers human, which leads to the need to re-evaluate and complement the education of subjects for the field of economy. Like any education, also this one needs to respond more flexibly to the situation in the new global environment. Although, in modern society the implementation of ESD to the educational process at all levels of schools is not new, it has been pointed out that, especially in the educational institutions that are focused on preparing future experts for the economy there is the need to focus this education on forming eco-literate individuals. This concept, learning tool or component of ESD, have been evidently enforced by new world situation, threatening the individual's, culture's, and civilization's current and future development. Education focused on eco-literacy can be considered as one of the tools of ESD through which it is possible to ensure not only that school graduates sufficiently understand the sustainability demand, but also that they acquire knowledge, skills, and competences to truly reflect that demand in practice.

Although we accept the need to shape eco-literate experts for all areas of society's life, we particularly pointed out the reasons why education for sustainability should focus on eco-literacy especially in those educational institutions that prepare future economic experts. Thanks to that, these individuals can understand not only that the production and consumption in the world continue at the exponential pace, but also that the natural resources, that humanity uses to meet their needs, are growing only very slowly, or even decreasing, which is getting into the conflict with the demand for sustainable development. Regarding the fact that they know the real value of natural entities and environment, there is raising the probability that they can reasonably consider the limits of resources utilization, but also initiatives and practices that lead to the growth in production and profit.

Eco-literacy is one of the preconditions for ensuring economic growth, along with sustainability. Therefore, it represents the important tool for transforming the economy and, consequently, the society onto the sustainable. At the same time, this is one of the main reasons why it is desirable to pay appropriate attention to ESD focused on eco-literacy, especially in those educational institutions that prepare experts for economic field. Thanks to the knowledge, skills, and competences provided by this education, they can consider besides the economic values also the social and environmental ones, as well as their importance for maintaining life on Earth, and consequently engage in developing not only sustainable economy but also the entire society and culture. More specifically, based on the acquired skills they can responsibly approach to the utilization of natural resources, minimize the socio-cultural burden on nature, prevent environmental pollution and thus increase the hope of maintaining ecosystem stability, as well as of establishing the equilibrium between society and nature. At the same time, they are able to engage truly in the new trends of economic thinking, which more specifically means designing and developing new initiatives, concepts, etc. in the economy, that promote social and economic development in accordance with the sustainability demand. In this manner they significantly contribute to the transformation of the economy onto the sustainable, as well as to the development of sustainable society.

But the rationale and emphasis of the importance of implementing eco-literacy oriented education into the education for sustainability is only the first step towards real impletion of the aforementioned visions. In addition, further steps need to be taken, which are related to the implementation of eco-literacy oriented educational process. In this regard, incentive suggestions by politicians, officials in the education sector, and other education experts and teachers themselves are expected, which aim is to transfer mentioned visions into the practice.

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CATEGORY OF ASPECT IN RUSSIAN VERBS: GRAMMAR, SEMANTICS, TEACHING METHODS

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Abstract: The article deals with the features of the category of aspect in Russian verbs in terms of the methods of teaching foreign students about them. Verb aspects are one of the most complex topics of Russian grammar. Consequently, a lot of central issues of aspectology remain subjects of discussion, which determines the relevance of this topic. The purpose of the article is to briefly describe the most important grammatical and semantic features of the category of aspect that are essential to the development of the teaching methodology. The author analyzes the issues of the grammatical content of the aspect, whether aspectual pairs are part of word-formation or inflection, as well as the semantic properties of the perfective and the imperfective aspect. The descriptive-analytical method and the methods of quantitative analysis and modeling are used in the study. As a result of the study, the author has come to the following conclusions: the methods of teaching aspects to foreign students should be based on aspectual pairs of verbs; students should not only receive necessary information on the formal features of verbs but also understand the semantic differences between them. Examples of exercises have been proposed to help students develop the skill of using aspectual pairs of verbs.

Keywords: aspectual pairs, category of aspect, imperfective aspect, Russian as a foreign language, perfective aspect, teaching methods, verb.

1 Introduction

Aspect is a very important and distinctive category of the Russian verb. The academician V.V. Vinogradov wrote, "The category of aspect is at the basis of most processes of intra-verb word formation and inflection. The morphological mechanism of the category of aspect is more complex and varied than that of other categories of the verb. However, its pattern is silent and expressionless unless one illuminates the inner, semantic bases for aspectual differences" [1: 393]. There are no verb forms in the Russian language that would be outside the aspectual system and would have no aspectual meaning. It is the aspectual meaning that determines the ability or inability to produce tense forms, participles and adverbial participles. According to A.V. Bondarko, the grammatical category of aspect has a central place among the means of expressing aspectual relations in the Russian language [2: 42]. Works on the category of aspect were written by such scholars as N.S. Avilova [3], A.V. Bondarko [4, 2], L.L. Bulanin [4], A.V. Isachenko [5], S.A. Karpukhin [6], Yu.S. Maslov [7], I.P. Muchnik [7], E.V. Paducheveva [9, 10], A.N. Tikhonov [11], M.Yu. Chertkova [12] and others. However, many questions related to aspect do not have conclusive solutions [13, 14].

Verb aspects are one of the most important and complex topics of Russian grammar. In many studies dedicated to teaching Russian as a foreign language, it is emphasized that learning aspects of the Russian verb is very difficult for students as this category is not present in many languages [15 - 19]. The most optimal method of teaching the category of aspect of the Russian verb is the functional-semantic method that includes the grammatical forms of expressing aspectual meanings [17, 18]. However, many questions that arise while studying the aspects of the Russian verb remain unsolved. In view of this, the purpose of the article is to briefly describe the most important grammatical and semantic features of the category of aspect that are essential to the development of the methodology of teaching it to foreigners. The relevance of the purpose is determined by the fact that many central issues of aspectology that are directly connected to teaching methodology remain subjects of discussion. The descriptive-analytical method and the methods of quantitative analysis and modeling, as well as pedagogical experiment, were used in the study.

2 Methods

The problem of the grammatical content of aspect is extremely important for the methodology of teaching Russian as a foreign language. The academician V.V. Vinogradov believed that "the

main function of the perfective aspect is to limit or eliminate the notions of the duration of action, drawing attention to a single moment of action as its limit" [1: 409]. At the same time, the imperfective aspect denotes the action in progress "not constrained by the idea of the limit of the process as a whole" [1: 409]. Therefore, the category of aspect denotes the relationship between the action and its inner limit.

However, a different definition often occurs in teaching practice. According to the definition, the perfective aspect denotes that the action is finished, completed while the imperfective aspect denotes the continuity, duration. This version is not exhaustive as it contradicts the semantics of many verbs. For example, the verbs of beginning in the perfective case do not carry the meaning of finishedness: *zapet, zashumet, vzrevet, pobezhat, poletet* [to start singing, to begin to make a noise, to start roaring, to start running, to start flying].

The notion "finishedness of an action" complicates the determination of the aspect of tense forms. It is difficult to explain to foreign students learning Russian that the Future Simple forms *napishem, postavim, otvechu* [we will write, we will set, I will reply] denote finishedness whereas the action denoted by this tense form has not yet been carried out. A.V. Isachenko notes that "the notion of 'finishedness' erases the distinction between the tense-related and solely aspectual semantic elements since 'finishedness' can be only applied to past tense forms (of the perfective aspect) like *on skazal, on napisal* [he said, he wrote]" [10: 134]. The notion of "finishedness" is also applicable to imperfective verbs because any part form denotes an action finished before the moment of speech: *rasskazyval, prieszhal, podpisывal* [he was telling, he was coming, he was signing], etc.. Therefore, the terms "finishedness/unfinishedness" should not be used when teaching the aspects. It seems more appropriate, although not always, to use the terms "efficiency" for the perfective aspect and "inefficiency" for the imperfective. The meaning of efficiency is manifested in the clearest way in the combinations of perfective verbs with direct objects: *postroit dom, napisat pismo* [to build a house, to write a letter], etc. However, many actions denoted by verbs of perfective aspect do not have an efficient result: *pomolchat, pogrustit, pobegat; zabolet, zaplakat* [to be silent, to be sad, to run; to fall ill, to start crying], etc. Sometimes imperfective forms can have an efficient meaning: *Kak tolko prekrashchalsya dozhd, deti vykhodili na progulku* [As soon as the rain stopped, children would come out for a walk].

Thus, the most accurate definition of grammatical semantics is through the notion of the "inner limit". The inner limit denotes the natural outcome of an action, reaching the goal, result or limit set by the semantics of the verb.

The basis of the category of aspect is aspectual pairs. As A. Meie wrote, "A notable feature of Slavic languages is the presence of the system of verb pairs" [20: 228]. In M.Yu. Chertkova's studies the data was received on the ratio of verbs with aspectual pairs and verbs without them – 97%:3% which "makes it possible to draw a conclusion about the development trend of the category of aspect in the modern Russian language that follows the path of universalization of the aspectual opposition in the entire verb lexis" [12: 134].

However, it remains the subject of discussion whether aspectual pairs are part of word-formation or inflection. In the academic Russian grammar 1980 [21], they are part of word formation: "An aspectual pair is formed by two different words that have a relationship of word-forming motivation: in the pair *delat – sdelat* [to do – to finish doing], the verb *sdelat* is formed from the verb *delat* with the prefix *s-*; in the pair *perepisyat – perepisyvat* [to finish rewriting – to rewrite], the verb *perepisyvat* is formed from the verb *perepisyat* with the help of the suffixal morph *-iva-*. Each member of an aspectual pair is an independent verb with its own basic form – the infinitive" [21: 584]. This notion contradicts the aforementioned idea, "An

aspectual pair is a pair of lexically equal verbs of perfective and imperfective aspects, that are different only in the grammatical semantics of aspect: *delat – sdelat, perepisat – perepisyvat* [21: 583]. If the members of an aspectual pair are lexically equal, they cannot be in a relationship of word-forming motivation as only syntactical derivatives that are different parts of speech can remain lexically equal in the process of word formation (*perepisat – perepisyvanie, dobryi – dobrota, les – lesnoi* [to rewrite – rewriting, kind – kindness, wood – woody], etc.). Therefore, following A.N. Tikhonov, we will consider the verbs with aspectual pairs within the framework of inflection, “An aspectual pair is a strictly grammatical notion” [11: 15]. This means that verbs that are part of an aspectual pair are identical in their lexical meaning, differing only in the grammatical meaning of the perfective/imperfective aspect.

3 Results and Discussion

The difficulties that foreign students face when studying the category of aspect are due to the fact that aspectual pairs in Russian do not have a single pattern and numerous suffixes and prefixes are used for their formation, for instance: *sozdat – sozdavat, perepisat – perepisyvat, oslabet – oslabevat, razgryzt – razgryzat, napravit – napravlyat, delat – sdelat, risovat – narisovat* [to finish creating – to create, to finish rewriting – to rewrite, to get weak – to be getting weak, to break with one’s teeth – to be breaking with one’s teeth, to direct – to be directing, to do – to finish doing, to draw – to finish drawing], etc. Besides suffixes and prefixes, aspectual differences are also expressed by the stress (*raz’rezat – razre’zat* [to cut – to be cutting]), sound interchange (*osvetit – osveshchat* [to illuminate – to be illuminating]), suppletion (*brat – vzyat, govorit – skazat* [to be taking – to take, to talk – to say]). This is the reason why verb aspects are one of the most difficult topics of Russian grammar.

As a result of our study, we came to the following methodological conclusion: the main requirement for teaching aspects to foreign students is to study all verb forms in aspectual pairs. Both one-aspect and two-aspect verbs should be studied but the verbs with aspectual pairs should always be the center of attention as they are the basis of the word-formation of the verb. Members of aspectual pairs should be introduced in such a context that will enable students to understand their connection as that of grammatical forms of the same verb: *Uchenik reshaet zadachu. – Uchenik reshil zadachu. Malchik lovit rybu. – Malchik poimal rybu* [A student is solving a task. – A student has solved the task. The boy is catching fish. – The boy has caught a fish].

The work on aspectual pairs of verbs should be the center of attention throughout the course when studying any kind of material – vocabulary, word formation, morphology, syntax. This can be done not only during Russian classes. One should pay attention to aspectual pairs while reading literature, during extracurricular events, guided trips and any other speech situations.

The introduction to aspectual pairs goes well with studying the questions *Chto delayu? Chto delaet? Chto delat? Chto sdelat?* (*chitayu stikhotvorenie – chital stikhotvorenie – prochital stikhotvorenie; stroit dom – stroil dom – postroil dom*) [What am I doing? What is one doing? What was one doing? What has one done? (I am reading a poem – one was reading a poem – one has read a poem; one is building a house – one was building a house – one has built a house)].

When studying tense forms (present, past, future compound, future simple) one can use oppositions of the following kind: *Ya pishu pismo. – Ya budu pisat pismo. Ya pisal pismo. – Ya napisal pismo. – Ya napishu pismo. Ya pishu pismo. – Ya napishu pismo* [I am writing a letter. – I will be writing a letter. I was writing a letter. – I have written a letter. – I will write a letter. I am writing a letter. – I will write a letter], etc. If the meaning of tenses is not taught in such oppositions, students will not learn to use them correctly as the tense and aspect systems are closely connected. The aforementioned constructions can be made more complex by introducing adverbial words, such as: *kazhdyi den, redko,*

chasto, inogda, nikogda, vdrug, neozhidanno [every day, seldom, often, sometimes, never, suddenly, unexpectedly], etc.

When studying the phonetic system of the Russian language, one should note the sound interchange during the formation of aspectual pairs of verbs, for instance: *otvetit – otvechat, sprosit – sprashivat, sobrat – sobirat* [to reply – to be replying, to ask – to be asking, to gather – to be gathering], etc.

The morphemic differences in aspectual pairs can be pointed out during the studying of the word structure – prefixes and affixes. One should devote attention to the groups of monostructural verbs so that students can learn several models of aspect formation: *pisat – napisat, risovat – narisovat, chertit – nachertit; dat – davat, uspet – uspevat* [to be writing – to finish writing, to be painting – to finish painting, to be drawing – to finish drawing; to give – to be giving, to manage – to be managing], etc. Moreover, one should note the most productive ways of aspect formation, such as purely aspectual prefixation, the formation of imperfective verbs with the suffixes *-iva-* (*-yva-*), *-a-* (*-ya-*), the formation of perfective verbs with the suffix *-nu-*, etc.

When studying adverbs, particular attention should be drawn to how aspectual forms collocate with different groups of adverbs. One could inform students which groups of adverbs collocate only with perfective or imperfective verbs and which collocate with both. For example, the adverbs denoting continuous actions (*vsegda, bespreryvno, postoyanno* [always, ceaselessly, constantly], etc.), irregularly repeated actions (*inogda, vremenami, vremya ot vremeni* [sometimes, at times, from time to time], etc.) and regularly repeated actions (*ezhednevno, po subbotam* [daily, on Saturdays], etc.) usually collocate with imperfective verbs. As for adverbs denoting momentariness, the swiftness of an action (*vdruk, neozhidanno* [suddenly, unexpectedly], etc.), they usually collocate with perfective verbs. While covering this topic, one could do the following exercises:

Exercise 1. Use the verbs in the correct aspect, make sentences with the adverbs listed below.

Example: *Brat inogda берет меня с собой на рыбалку. Vdrug podul silnyi veter i nachalsya dozhd.*

Vnezapno, vdrug, neozhidanno, totchas, vseгда, izredka, vremenami, inogda, ezhednevno.

Exercise 2. Use the verbs in the correct aspect, make sentences with the words and word combinations listed below.

Example: *Kazhdoe utro ya delayu zaryadku.*

1. *Kazhdyi god, kazhdyi mesyats, kazhduyu nedelyu, kazhdyi den, kazhdyi vecher.*
2. *Vremenami, godami, vecherami.*
3. *Po vecheram, po voskreseniyam.*
4. *Redko, chasto, inogda.*

The study of aspect is connected to the predicate, especially the complex verbal predicates. One should pay particular attention to the collocation of imperfective verbs with phrasal verbs and their incompatibility with the perfective verbs, for instance: *nachnu chitat, prodolzhayu chitat, zakonchil chitat* [I will begin reading, I am continuing to read, I have finished reading], etc. It is recommended to do the following exercises:

Exercise 1. Choose the verb in the correct aspect in the indefinite form.

1. *Sestra nachala (myt – vymyt) posudu.*
2. *Prepodavatel prodolzhaet (obyasnit – obyasnayat) novuyu temu.*
3. *V zale pogasili svet i stali (pokazat – pokazivat) kinofilm.*

Exercise 2. Explain the difference in the meaning of the sentences. What is the difference in meaning expressed by?

1. *Ya nachal rasskazyvat druzyam interesnuyu istoriyu. – Ya nachinal rasskazyvat druzyam interesnuyu istoriyu.*
2. *Kogda ya*

zakonchu chitat stikhotvorenie, my ego budem analizirovat. – Ya uzhe zakanchivayu chitat stikhotvorenie. Teper my ego proanaliziruem.

When studying the complex verbal predicate, one should also work on using aspect in the combinations of the infinitive with the words of the category of state (impersonal-predicative words) that have a modal meaning. Some of them collocate with perfective infinitives, others with imperfective ones. Thus, with the words *nado, nuzhno, sleduet, dolzhen, neobkhodimo* [one has to, one needs to, one should, one ought to, one must], etc. perfective infinitives are predominantly used (*dolzhen soobshchit, nuzhno uekhat* [one ought to inform, one needs to leave], etc.). When there is a negation *ne* [not], these words (*ne nado, ne nuzhno, ne sleduet, ne dolzhen* [one does not have to, one does not need to, one should not, one ought not]) require the imperfective infinitive (*ne dolzhen soobshchat, ne nuzhno uezzhat* [one ought not inform, one need not leave], etc.). The same is true for *ne stoit, ne k chemu, nezachem* [there is no point, it is no use, it is pointless], etc. (*ne stoit volnovatsya* [there is no point in worrying], etc.). The verbs *privyknut, nadoest, nauchitsya, ustat, zapretit* [to get used to, to get bored of, to learn, to get tired, to ban], etc. are always followed by the imperfective infinitive (*nadoelo zhdat, nauchilsya plavat* [bored of waiting, learned to swim], etc.). With the verbs *udalos, uspel, zabyl* [managed, had time to, forgot], etc. the perfective infinitive is often used (*udalos kupit, uspel rasskazat* [managed to buy, had time to tell], etc.). This material can be easier learned with the help of these exercises:

Exercise 1. Make sentences with the words *nado, nuzhno, dolzhen (dolzhna, dolzhny), neobkhodimo* [one has to, one needs to, one ought to, one must] by using them with an infinitive and a direct object.

Example: *Mne nado skhodit v magazin. Tebe nuzhno zapisatsya na priem k vrachu.*

Exercise 2. Make sentences with the words *ne nado, ne nuzhno, ne sleduet, ne dolzhen* [one does not have to, one does not need to, one should not, one ought not]) by using them with an infinitive and a direct object.

Example: *Mne ne nado idti v magazin. Tebe ne nuzhno zapisyatsya na priem k vrachu.*

Exercise 3. Make sentences with the words *ustal, zapretit, nauchilsya, nadoelo* [got tired, banned, learned, got bored] by combining them with the indefinite form of the necessary verb.

Example: *Letom ya nauchilsya plavat.*

Exercise 4. Make sentences with the words *udalos, uspel, zabyl* [managed, had time to, forgot] by combining them with verbs in the indefinite form.

Example: *Sestra zabyla kupit khleb.*

The teacher should draw students' attention to the usage of aspects in the imperative mood with the negative particle *ne* [not]. The imperfective forms in the imperative mood with the particle *ne* denote an order, request (*ne krichi, ne prygai* [do not shout, do not jump], etc.). The perfective forms in the imperative mood with the particle *ne* denote a warning (*ne krikni, ne prygni* [do not make a shout, do not take a jump], etc.). Imperfective forms with a negation also denote a categorical order: *Ne dvigatsya!* [Do not move!]. To express a categorical order, infinitives of both kinds should be used without a negation: *Vstat! Molchat!* [Stand up! Be quiet!].

Already at the beginning stages of learning the Russian language, foreign students should know that homogeneous predicates usually contain verb forms of the same aspect. At the same time, a chain of perfective verbs denotes a sequence of finished actions (*Umylsya, odelsya, pozavtrakal...* [Washed up, got dressed, had breakfast...]). A chain of imperfective verbs denotes simultaneous actions (*Umyvalsya, odevalsya,*

zavtrakal... [Was washing up, was getting dressed, was having breakfast...]).

When studying complex sentences, especially those with time clauses, conditional clauses, purpose clauses, etc. one must teach students to correctly form sentences that express simultaneous and consecutive actions. For example, *Kogda ya napisal sochinenie, uchitel podoshel ko mne* [When I finished writing the composition, the teacher came up to me] (the perfective aspect denotes a sequence of actions); *Kogda ya pisal sochinenie, uchitel podkhodil ko mne* [As I was writing the composition, the teacher would come up to me] (the imperfective aspect denotes simultaneous actions).

When choosing aspectual pairs for students' active vocabulary, one must proceed from lists of basic vocabulary, vocabulary from Russian textbooks and readers and consider words that are useful in communication even if they are not part of basic vocabulary dictionaries or textbooks.

There are more opportunities to work on the semantics of aspects at the more advanced stage of learning. This work is based on the fact that students are more or less fluent in forming various types of simple and complex sentences, while they are mastering the rules of collocating aspects with other words and vice versa – the study of aspects is beneficial for learning the rules of collocation of Russian words, word combinations and sentences.

Another important result of our study is in the following statement: students must receive all the necessary information not only on the formal features of verbs but also deeply understand their semantic features and understand the differences between their meanings. Only this way one can ensure the correct usage of aspect forms in speech.

Every aspect has its general and particular meanings. As noted previously, the general meaning of the perfective aspect is the denotation of the inner limit of an action and the general meaning of the imperfective aspect is the denotation of an action in progress, as it is carried out. The general meanings of the aspects are inherent and present in any usage, although, the degree of their manifestation varies significantly in different grammatical forms. The general meanings are realized in particular meanings when verbs are used in certain aspect forms. The theory of the general and particular meanings of the aspect was developed by A.V. Bondarko and L.L. Bulanin [4: 52-61].

Every aspect has its particular meanings. The following are the particular meanings of the imperfective aspect: 1) the concrete-process meaning – the action takes place within a certain period of time, once, for example: *Tselyi chas reshal zadachu* [Spent an entire hour solving a problem]; 2) the continuous-uninterrupted meaning, for instance: *Reka Volga vpadat v Kaspiiskoe more* [The river Volga flows into the Caspian sea]; 3) the clear-exemplary meaning – the repeated action is presented in one of its manifestations, for example: *Kazhdoe voskresene my gulyaem v parke* [Every Sunday we take a walk in the park]; 4) the unlimited-multiple meaning – the action is presented as an unlimited row of repetitions, for instance: *Inogda po dvoru proezhali mashiny* [Sometimes cars would drive through the courtyard]; 5) the potential meaning – the action is possible at any moment, for example: *Devushka khorosho tantsuet* [The girl dances well]; 6) the limited-multiple meaning – the repetition of the action is limited, for example: *Brat dva raza priezhal k nam v gosti* [My brother came to visit twice]. The first three meanings are connected to non-repeated, single actions and the other three are connected to repeated multiple actions.

The particular meanings of the perfective aspect are: 1) the concrete-factual meaning – the action is a concrete single fact, for example: *Uchenik reshil zadachu* [The student has solved the problem]; 2) the clear-exemplary meaning – one act of a repeated action is a clear example of other acts, for instance: *Kak vseгда, vstanu rano, odenus, poedu na rabotu* [As usual, I will get up early, get dressed and go to work]; 3) the potential meaning – the action can take place at any time, for example: *Poidet dozhd* [It will rain]; 4) the aggregate meaning – the action

manifests as the sum of single facts, for instance: *Neskolko raz poskolznulsya i upal* [He slipped several times and fell].

Particular meanings of aspects have different positions in the system of language and speech, so their frequency of usage is not equal. Thus, the concrete-process and the general-factual meanings of the imperfective aspect are much more common than others. Some particular meanings of aspects are typical only for small semantic groups of verbs. For example, the continuous-uninterrupted meaning occurs only in the verbs of relation, state, transition, as well as the verbs denoting an action that can be thought of in its development: *imet, tsvesti, vytekat, vpadat, chernet, zelenet, bolet, zybnut* [to have, to blossom, to flow out, to flow into, to become black, to become green, to be ill, to be cold], etc. The most common meaning of the perfective aspect is concrete-factual. The second most commonly used is the aggregate meaning of the perfective aspect. The clear-exemplary and the potential meanings of the perfective aspect occur rarely and are stylistically limited. Such meanings should be studied only at the advanced stage of learning the Russian language when students have a rather good command of the system of aspects and tenses and can understand the usage of grammatical forms in figurative meaning.

Considering the different frequency of usage of different aspectual meanings, the stylistic limitations on some of them and the different communicative significance of the particular meanings of aspects, one must take a differentiated approach to learning them. More attention should be given to the particular aspectual meanings that occur more often and that are the most important for communication. When studying the semantics of the aspects of the Russian verb, it is feasible to concentrate on the following particular aspectual meanings: for the imperfective aspect – on the concrete-process meaning and the meaning of repeated action (as these meanings become familiar and based on the first meaning – the concrete-process meaning – one could introduce a more abstract, the general-factual meaning of the imperfective aspect); for the perfective aspect – on the concrete-factual and the aggregate meanings.

The realization of aspectual meanings in a particular speech situation depends on several factors: communicative attitudes, the speaker's and the interlocutor's intentions and what messages they want to transmit to one another. Based on this, the speaker chooses a perfective or an imperfective verb. For example: *Vchera Ivan pozvonil mne i pozdravil s prazdnikom* [Yesterday Ivan called me and congratulated me on the occasion]. The speaker is talking about what happened in this particular case and in accordance with that chooses a perfective verb. If the communicative intention changes, the same fact can be represented by an imperfective form, for example: – *Ivan zvonil tebe?* – *Da, zvonil vchera, pozdravlyal s prazdnikom* [– Has Ivan called you? – Yes, he did yesterday, congratulated on the occasion].

The choice of the aspect also depends on the communicative orientation of the reply in the dialogue. Compare: 1) – *Plan raboty kafedry utverdili vchera na zasedanii?* – *Net, ne utverdili.* [Was the schedule of the department approved yesterday during the meeting? – No, it was not approved.] 2) – *Plan raboty kafedry utverdili vchera na zasedanii?* – *Net, ne utverzhдали.* [Was the schedule of the department approved yesterday during the meeting? – No, it was not considered.] Both dialogues are in accordance with the norms of the Russian language. However, they express different meanings. The first dialogue states that the plan was not approved, it was declined. In the second dialogue, the interlocutor says that the plan was not considered, this action did not occur.

Aspect usage often depends on linguistic factors. Various limitations are due to other grammatical categories such as time, mood and voice, the functioning of which is closely connected to the category of aspect and affect its semantics. This is caused by the fact that any verb in its usage expresses a whole complex of grammatical meanings at once – aspect, tense, mood, transitivity/intransitivity, voice, person, number. This creates the conditions for the interaction and mutual influence of

grammatical meanings and as a result, the usage of the verb form can be limited or its meaning can be transformed.

Some grammatical meanings of verbs interact very closely while others maintain relative independence. The closest contacts are between the categories of aspect and tense. The interconnection of these categories is reflected in the fact that the forms of the imperfective aspect of verbs create a complete tense paradigm (*chitat – chitayu – budu chitat* [I was reading – I am reading – I will be reading]), and the forms of the perfective aspects have an incomplete tense paradigm (*prochital – prochitayu* [I read – I will read]), do not have a present tense.

The interconnection of these categories also manifests in the fact that aspect usage is closely connected to the functioning of tenses. The past and the future, denoting repeated actions, and the abstract present are the main areas of using the imperfective aspect. The perfective aspect rarely occurs in these tense forms. Single particular aspect meanings are realized in limited tense forms. For example, the clear-exemplary meaning of the perfective aspect is rarely used in the past. Usually, this meaning is realized in the future simple and much more rarely in the infinitive. The meaning of the statement of fact of the action that is typical for the imperfective aspect is widely used in the past forms. As for future forms, the usage of this meaning is limited.

When studying the main meanings and functions of aspects in their interaction with the tense forms of verbs, it is feasible to do various tasks and exercises. For example, semantic analysis of tense forms of verbs in texts, the replacement of aspect forms, the choice of the correct aspect forms to insert into already existing sentences, the formation of word combinations, sentences and coherent stories based on the given aspectual pairs, the organization of a conversation between students while using the given verbs, writing compositions with the given aspect forms, etc. Let us provide examples of some types of exercises that should be used while studying aspects in the past tense of the verb:

Exercise 1. Put the verb pairs into the past tense and make sentences with them. Explain the meanings of the sentences.

Example: *Ko mne prishel tovarishch.* – *Ko mne prikhodil tovarishch.* – *Otets segodnya prishel s raboty v 18 chasov.* – *Otets vseгда prikhodil s raboty v 18 chasov.*

Priiti – prikhodit, zaiti – zakhodit, doiti – dokhodit, uiti – ukhodit, podoiti – podkhodit, naiti – nakhodit, vyiti – vykhodit.

Exercise 2. Answer the questions using the given verbs in the form of the past tense in the perfective or the imperfective aspect and adding other words.

Example: *Chto ty delal vchera?* – *Vchera ya uchil stikhotvorenie.*

Chto ty delal vchera? Chto ty sdelal vchera? Chto ty delal vchera utrom? Chto ty sdelal vchera utrom? Chto ty delal segodnya posle obeda? Chto ty sdelal segodnya posle obeda? Chem ty zanimalsya do obeda? Chem ty obychno zaimaesh'sya do obeda? Chto ty delal v sadu? Chto ty sdelal v sadu?

Words for answers: *chitat – prochital knigu, gladit – pogladit bryuki, myt – vymyt posudu, smotret – posmotret televizor, ubrat – ubirat komnatu, otdokhnut – otdykhat, sazhat – posadit derevya, polit – polivat tsvety.*

Exercise 3. Explain which of the two forms can be used in these sentences.

Ya vseгда (vstaval, vstal) rano. No segodnya prospal i (vstaval, vstal) tolko v 8 chasov. Nikogda ne (opozdal, opazdyval) na zanyatiya, a segodnya (opozdal, opazdyval). Ya (podoshel, podkhodil) k auditorii i (stuchalsya, postuchalsya) v dver. Mne (razreshili, razreshali) voiti, no (delali, sdelali) zamechanie. Ya (izvinilsya, izvinyalsya) i (govoril, skazal), chto bolshe ne budu opazdyvat.

The category of mood significantly influences the usage of aspects. The forms of imperative mood are particularly worth noting as they express a full range of meanings – from a categorical order to a request – and introduce additional shades and meanings to aspectual verb forms.

Most modal meanings of imperative forms are attached to a particular aspect. For instance, the main modal meaning of the imperfective aspect form is the hortative meaning. The speaker's attention is directed towards the fact of the action instead of its result, for example: *Sobiraisya! Odevaisya!* [Get ready! Get dressed!]. The hortation can be addressed to the interlocutor to continue the action that was already started, for instance: *Govorite, говорите! Ya slushayu* [Speak on, speak on! I am listening]. Imperfective forms tend to have the meaning of invitation, for example: *Zakhodite!* [Come in!]. They can express permission to carry out an action, for instance: *Sadites!* [Sit down!] (the teacher to students). The imperfective aspect in the imperative mood is often used in calls to action, instructions and other similar texts, for example: *Ne ostavlyajte detei bez prisma! Ne razreshaite detyam igrat ryadom s zheleznoi dorogoi!* [Do not leave children unattended! Do not let children play near the railroad!]

Perfective forms usually express an order, recommendation, request, for example: *Rasskazhi o poezdke! Vozmi dengi! Kupi bilet!* [Tell me about your trip! Take the money! Buy a ticket!]

To improve the knowledge of the imperative mood, it is recommended to do the following exercises:

Exercise 1. Explain the meaning of the verbs in italics, specify their mood.

1. *Priezhaite* k nam v gosti. 2. *Smotri, uchis* khorosho. *Smotri, ne opozdai. Smotri, ne upadi.* 3. *Vkhodite, razdevaites, sadites.* – *Voidite, razdentessya, syadte.* – *Voidi, razdensya, syad.* 4. *Podozhdi* menya zdes. Ya skoro pridu.

Exercise 2. Make sentences according to the given situation.

1. *Kto-to stuchitsya v dver. Khozyain razreshaet voiti. Kakoi glagol nuzhno upotrebit i v kakoi forme? Obyasnite ego znachenie.* 2. *Vy uvideli v okno znakomogo, kotoryi idet k vam. Vy otkryli dver i priglashaete ego voiti. Predlagaete stul, potom ugoshchenie. Kakie glagoly nuzhno ispolzovat i v kakoi forme?* 3. *Vas zovet mama i prosit skhodit v magazin, kupit khleba, moloka, posmotret, rabotaet li ovoshchnoi larek. Kakie glagoly nuzhno upotrebit i v kakoi forme?*

Exercise 3. Make up a task that you would give to a younger sibling using verbs in the imperative mood.

Exercise 4. Find forms in the imperative mood in the literary text and explain their meaning. Note when they can be replaced by a different form.

During classes dedicated to the category of aspect and verb inflection, one should use a grammar dictionary [22]. This dictionary contains aspectual pairs in one entry which emphasizes their interconnectedness and interdependence. A detailed elaboration of the verb inflectional paradigms for each member of an aspectual correlation makes the dictionary an important reference book for teaching Russian as a foreign language [23].

4 Conclusion

In conclusion, the aspectual meanings are realized differently in different grammatical verb forms. Every grammatical form is highly specific in the way that particular aspectual meanings are combined within it, as well as in the way they are realized, which must be taken into consideration when teaching Russian as a foreign language. The main teaching method when learning the aspect is the reliance on aspectual pairs of verbs considering their semantic features. As a result, students gradually accumulate important grammatical knowledge on the formation and usage of aspects of the verb.

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ECONOMIC CONSEQUENCES OF IMMIGRATION TO AUSTRIA

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Abstract: In the past years we have noticed changes in the features of migrating work force from the Slovak Republic. The most common target country of Slovaks leaving for work is no longer the Czech Republic, but Austria. Calculations of migration benefits from the arrival of work force from the Central and East European countries in Austria countries and calculations of losses and benefits from the migration from the third-world countries aim at explaining the development of economical, social and demographic parameters in the country. It may be stated that work force migration from Central and East Europe is beneficial for Austria and high expenses on refugees.

Keywords: Immigration, emigration, refugees, third world countries, consequences of migration.

1 Introduction

Labor force migration is one of the most relevant economic and social issues. The original EU member states feared that after EU enlargement they would have to face an unchecked influx of migrants from the new member states from Central, Eastern and Southern Europe, which resulted in the implementation of temporary restrictions in order to protect domestic markets in Austria, Germany, etc. In the context of push and pull theory, the main economic motivations behind the intention of migrants to abandon their home country and seek employment abroad are higher wages, lower unemployment rates and higher number of available positions. Migration of labor force has many benefits for both the sending and the receiving countries. In the case of the former, it reduces unemployment and thus the pressure on the public finances, while the latter gains already qualified labor force, i.e. it gains workers whose education and training has been paid for by another country. On the other hand, it has its drawbacks, be it the so called “brain drain”, issues with integration, public tensions, etc. Therefore, migration and its many aspects (i.e. its causes and motivation behind it, its scope, its regional impact) have been extensively studied. A significant portion if this researched focused on the migration of highly qualified workers who drive the innovation flow, and who are particularly valuable for the receiving country.

However, the free movement of workers is not the only kind of migration countries face nowadays. Multiple military conflicts have created a mass influx of refugees, who flee from the danger into the safer and often more economically developed countries. The scope of refugee crisis puts a considerable strain on the receiving countries who often tighten their migration policies, which affects economic migrants as well. When regulating migration flows, countries can implement both direct and indirect measures. The example of the direct ones could be quotas on the number of asylum seekers. The indirect measures include additional financial support provided to those mi-grants who decide to return to their home country before asking for an asylum, restrictions limiting the immigrants’ access to the receiving country’s labor market, etc.

Despite the fact that countries of Western Europe enjoy many economic benefits because of migration from Eastern and Central Europe, public opinion, politicians and mass media often engage in a heated debate on migration. On one hand, there is a humanitarian duty to help the refugees, and on the other, there is a fear that the influx of refugees and migrants from Eastern Europe will threaten their social and economic order.

Considering the magnitude of this issue, migration should be at the forefront of academic research. However, most of the studies are con-ducted on local samples or rely heavily on estimates.

National statistics on migration also do not offer a detailed insight into the scope of migration and the specific motivation behind it.

2 The theoretical basis of investigation of economic aspects of migration to Austria

Emigration flows dominate in most countries in Central and Eastern Europe mainly. Borders of migration were opened by changing the social organization. Political and economic instability in post-communist countries, low living standards, high unemployment rates were not attractive to migrants not only from Western Europe, but also for migrants from neighboring countries in Central Europe. On the contrary, ever more immigrants began to leave from these countries gradually migrants were enticed by their families living and working abroad, employment opportunities, higher wages, a stable social order, and so on. World global processes of economic and social development intensified this trend. EU enlargement and the adoption of new Central European countries provided additional opportunities for the citizens of Central European countries on labor markets of Western Europe, where one of the main pillars is free movement of labor (Habánik, Koišová, 2011; Dagilene, et al, 2014), which has become applicable for the newly adopted countries in 2011.

After a transitional period that the country could apply, Article 45 of the Treaty on the Functioning of the European Union with further secondary legislation and the case law the Court of Justice has entered into force in full range. The citizens of newly admitted Central European countries they gained the right to seek employment in another Member State to work there without a working permit, to live for this purpose in it, but also to stay after termination of employment in it. Aforementioned legal standards ensure to citizens of the newly adopted countries the same treatment as is standard for nationals of Western European countries in terms of access to employment, working conditions and all other social and tax advantages.

Migration policies implemented by destination countries are other factors with great impact on the emigration of workers from Central European countries. For example, pro-immigration policy of the German Federal Republic and Austria caused the rise of interest in these countries, a policy objective was to attract skilled workers by releasing the rules of employment in insufficient jobs, creation of attractive working conditions and various forms of benefit. Austria has become the most frequently elected country from various countries of Central Europe and the Balkans. Examination of internal labor migration within the European Union countries fills a gap in professional and public discussions only partially (Andrijasevic, Sacchetto, 2016; Pajnik, 2016)

For example, annual decrease in short-term emigration to Austria from Slovakia represents almost 13,000 people and reached the level of 42,100 persons. In 2014 – 2017, growth from 37,000 to 55,600 persons. We have noticed increasing interest in Germany also, 28,800 people emigrated there in 2017 it was 24,900 people in 2018. The number of shortterm emigrants to the Czech Republic decreased slightly, but with greater insight into the target country we find that using intergovernmental agreements of the former Czech and Slovakia after the split about the same conditions for study, as domestic students have and the quality of study, Slovakia losing almost 30% graduates of secondary schools because they want to study at universities in the Czech Republic. Migration flows are developing also in other neighboring countries similarly - in Poland, Hungary, Serbia, Slovenia, Romania, Bulgaria and other Balkan countries.

Analysis of the intensity and scope of migration flows of labor force abroad dominates in most cases of exploring of labor migration in Central Europe, its motives (Divinský, 2005; Blanchflower, Shadforth, 2009; Rosenow, 2009; Schaeffer, 2010; Kordoš, 2014; Simkus, 2014) and they less frequently

analyze its economic and social consequences for the country as well as for migrants. Migration is seen as a positive phenomenon for the source country as well as the recipient country without justification its positive aspects in professional and scientific works mostly (Daugėlienė, 2007; Favell, 2014; Kahaneč, 2015). Analysis of the economic impact of labor migration for countries of origin as well as destination country occurs in professional and scientific publications only marginally (Čekanašičius, Kasnauskienė, 2009; Schaeffer, 2010; Polakowski, Szelewa, 2016). Impact of labor migration for level of wages in the target countries is examined rarely and also just marginally (Daugėlienė, 2007; Drinkwater, 2009). Most analyzes of labor migration abroad is focused on investigation of its impact on unemployment rate (Karbach, 2005; International, 2012).

Economic aspects of migration are not in the main focus of professional and scientific community in most cases. It is rule to say about the added value and its economic aspect only with regarding the problem of brain drain (Kazlauskienė, Rinkevičius, 2006; Daugėlienė, 2007; Polakowski, Szelewa, 2016). It also considers the eventual potential economic losses for the country of emigration (Divinský, 2009) and about the benefits of immigration for the country, which thus obtains costless prepared labor force. As a positive phenomenon are evaluated acquire new business knowledge and new experiences, especially language (Adepoju, et al., 2010; Kazlauskienė, Rinkevičius, 2006), so that the acquired knowledge and experiences could be utilized at work after returning home (Jančíková, 2014).

The problems of the impact of migration on social policy of the state on different social or ethnic problems are beginning to require attention (Rievajová, Bernáthová, 2002; Mau, Burkhardt, 2009; Spies, Schmidt-Catran, 2015). Attention is given to the security aspects of migration, terrorism and climb crime also, in cases where migrants are suspected or convicted. (Karabinoš, Balga, 1997; Haládk, Csámpai 2002; Andersson, 2016).

Professional and scientific community, public opinion, politicians, public institutions and mass media do not have the information and knowledge about working immigration, nor on immigration from third countries, despite the importance of this issue. Information is at the level of estimates, assumption and judgments in most cases. The exact balance of immigration flows abroad, their scope and intensity in time and space, the impact on employment as countries of origin of emigration as well as countries of destination, the experience of return calculation or assessment of the balance of losses and benefits of immigration for society, state, and possibly for the migrants themselves absent in measures and policies of the state, local authorities, as well as in professional and scientific research and publications yet.

3 Research objective, methodology and data

This study aims to evaluate the economic gains and losses from the migration in Austria. We look into both the immigrants from the new EU member states (Central Europe) and the influx of refugees from the third countries. The main goal of our study is to create a model approach to evaluation of economic gains and losses from the labor force migration, while determining the economic impacts of the two above mentioned migration waves on Austrian economy. In order to reach this goal, we will calculate both the costs and profits stemming from the immigration of labor force from the surrounding countries. We also look into the costs and profits connected with the refugee crisis, such as costs of asylum proceedings, costs of measures aiming to foster the refugees' integration into the society and the labor market and the potential economic gains from such an integration along with the return on spent public finances in the long term. Since the scope of this study does not allow for analyzing all Western European countries, we have chosen to focus on Austria, which is attractive for both economic migrants and refugees.

We have used statistical data on the number foreign nationals in Austria and their position on the Austrian labor market. We have created a model of calculating the losses and gains, which converts selected macroeconomic indicators (Statistics Austria, 2018, Federal Ministry of Labor, Social Affairs and Consumer Protection of Austria, 2018, ILO 2018, OECD, 2018). We have also used data on the number of refugees and asylum seekers (IOM, 2018, Federal Chancellery of Austria, 2018). Data on the number of refugees, the state expenses for their care and protection, their placement on the labor market, integration and the contributions to the state budget were gained from the various state institutions' (Institut für Höhere Studien, 2015; Wiener Institut für internationale Wirtschaftsvergleiche, 2015; International migration Report, 2015; Oswald, Weissensteiner, 2015).

The study uses general scientific methods of induction, deduction, scientific abstraction and comparison, analysis and synthesis of selected facts, phenomena and processes. To calculate the data acquired, statistical and mathematical methods and calculations were implemented.

Multiple theoretical theories covering the issue of migration discuss its motives (push and pull factors), with the economic factors, such as unemployment and wage levels, are considered to be the most important ones. According to ILO, Austria's unemployment rate is in the long term significantly lower than Slovak unemployment rate. The big-gest difference was observed in 2010, when it reached 9.6 percentage points. Since then, the unemployment rate in Austria has been growing slightly, while the unemployment rate in Slovakia has fallen, which has reduced the differences. In 2018, the difference between Slovak and Austrian unemployment rate was only 1.3 percentage points.

According to Statistics Austria, which works with the national definition of unemployment, Austrian unemployment rate rose to 9.1 % in 2015 (for comparison in 2009 it was 7.2 %), this value being the highest in the last two decades. Unemployment rate in 2018 is 4.9%, annual decrease almost 28,000 people. National statistics also record the unemployment rate among the foreign nationals, which was 7.7 % in 1995, then continued to grow to 10.6 % in 2005. Afterwards it started to fall until 2009, when it again exceeded 10 %, and it has been continuously growing since 2013, reaching its highest value of 13.5 % in 2016. In 2018 is 11.3%, in people without a passport is 33%.

Immigrants in Austria work predominantly in construction, hospitality, healthcare and tourism, which corresponds with the development of new available job positions. The above-mentioned positions are often relatively less attractive for the domestic workers because of comparatively lower wages, and therefore immigrants supplement domestic workforce in these positions.

Table 1 Gross wage development 2009 – 2018

	2009	2010	2011	2012	2013
Slovakia	744.5	769	786	805	824
Austria	2378	2393	2418	2477	2513
	2014	2015	2016	2017	2018
Slovakia	858	883	912	954	1013
Austria	2556	2599	2646	2689	2732*

* Note: for 2009 – 2018 data until 31. 12., in Austria estimate

Source: ŠÚ SR, Statistics Austria (2009-2018), authors' table

Higher wages in prospective countries are an important motivational factor in the process of considering the option to immigrate (Ravenstein, 1985). Even though the wages in Slovakia have been steadily growing over the studied period, the wages in Austria are almost 2,5 times as high. The difference between the wages in both countries is slightly decreasing, since the wages in Slovakia grow faster than those in Austria; however, there is no denying that they remain rather staggering. The gross wages in Slovakia grew faster than in Austria by 4,58 percentage points. Slovakia experienced the biggest growth in

2018 (6,18 %) and Austria in 2012 (2.4 %). The gross wages in Slovakia grew faster than in Austria by 4,58 percentage points.

Slovakia experienced the biggest growth in 2018 (6,18%) and Austria in 2012 (2.4%).

Table 2 Inhabitants of Austria according to their nationality

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Inhabitants overall	8351643	8375164	8408121	8451860	8507786	8584926	8700471	8772865	8822267
Austrians	7468064	7464961	7456692	7447592	7441672	7438848	7432797	7430935	7426387
Non-Austrians	883579	913203	951429	1004268	1066114	1146078	1267674	1341930	1395880
EU (27)	389130	411843	439464	474641	518670	570298	616401	655524	693855
EU (14)	186375	196948	206349	217776	230730	241231	253055	262803	272024
New member states (13)	202755	214895	233115	256865	287940	329067	363346	392721	421831
Slovakians	19211	20381	22547	25333	28612	32052	35326	38094	40182
Immigrants from the third countries	486265	492954	503458	520980	538745	566915	642186	677201	692600

Source: Statistics Austria (2009-2018), authors' table

Out of 8.8 mil. people living in Austria in 2018, more than 1.4 mil. (15.8%) were foreign nationals. The number of immigrants rose by more than 4% since. Almost half (49.71%) of the foreign nationals living in Austria came from other EU member states. 30.22% of immigrants came from new member states (those who joined EU after 2004); this number was a result of 7.41% growth over the studied period. The number of Slovak nationals living in Austria has been growing steadily during the studied period, and in 2018 there were more than 40 thousand Slovak nationals living in Austria, which was 2.88% from the overall number of immigrants in Austria. Immigrants from the countries not in the EU constitute more than a half of foreign nationals in Austria; their number growing by 125,7 thousand over the studied period 2015 - 2018.

When it comes to specific states, most of the foreign nationals in Austria in 2005 were from Serbia, Turkey, Bosna and Herzegovina, Germany, Croatia, Poland, Romania, Macedonia, Hungary and Russia. The situation has changed in 2015, and the most numerous immigrants were from Germany, Turkey, Serbia, Bosna, Croatia, Romania, Poland, Hungary, Russia, and Italy.

Table 3 Asylum rulings in Austria (2009-2018)

Year	Asylum rulings			
	Overall	Affirmative	Refusals	Other
2009	15821	3247	13531	3459
2010	11012	2977	13290	2512
2011	14416	3572	11553	2100
2012	17413	3680	10745	1878
2013	17503	4133	10379	2163
2014	28064	8734	9068	1032
2015	88340	14413	13152	8009
2016	42285	22307	13124	10992
2017	24735	21767	14320	7005
2018	13746	14696	12897	3259

Source: Statistics Austria (2009-2018), authors' table

More than 88 thousand refugees asked for an asylum in Austria in 2015. Most of them came from Afghanistan (25 563), Syria (24 547) and Iraq (13 633). In 2018 refugees asked from Syria (3329), Afghanistan (2120) and Iran (1107). The asylum seekers are not allowed to work until the asylum procedure is over and an official ruling on their case has been made, therefore they have to be financially supported by the state. If a refugee is accommodated in a specialized facility, they are entitled to a maximum allowance of 40 € because the accommodation and food are already provided for. Other benefits include 150 € per year for clothing and 200 € per year for school necessities. It is estimated that the overall cost per one refugee who came into the country in 2015 is 16200 €. In case the asylum is granted, Austrian government provides 17 € per day for an accommodation for the duration of four months, 180 € per month for food, 40 € allowance, free health check-up, free healthcare and education along with school supplies.

The cost of the minimum care for one asyulant while they are looking for an employment is roughly 828 € per month if the person is living alone. If the household consists of two adults, they receive 621 € per month per person and 224 € per month per child. Asylum is being granted for at least three years. The overall expenses expedited by state in connection with the refugee crises cover basic care (accommodation, food, allowance, clothing, school supplies, etc.), cost of the asylum procedure, family benefits, healthcare, school attendance, integration policy, active employment policy, transportation, legal help, interpreters, and many others. In 2015, all these expenses amounted to 350 mils. €, and it is expected that by 2019 the cost will reach 2.4 billion €. Cumulative costs for the state budget are estimated to reach 8.1 billion €.

The unusually high numbers of refugees put an undue amount of pressure on the asylum procedures and supporting institutions, healthcare system, child therapists, and other supporting professions. The number of conflicts between domestic population and immigrants escalates, and the ethnic cultural tension within the society grows. Domestic population experiences pressure on all the systems ensuring the functions of the country and society, which negatively influences their perception of immigrants. The mandatory school attendance leads to higher number of pupils in the class who do not speak the language. The fact that 70 % of asylum seekers have completed only elementary education puts pressure on the labour market, where they struggle to find employment, thus creating the need for the state to invest into their education so that they would gain the necessary skills.

4 Analysis and discussion

Austria's policy can be considered in general proimmigration, even though in 2004 in reaction to the EU enlargement it implemented the strictest temporary restrictions possible. These measures limiting the access of workers from new member states to the Austrian labor market were an attempt to protect the domestic labor market. The enlargement was a cause for worries since four new member states were either its neighbors or in close geographic proximity. These worries included unemployment growth, added pressure on the wages and growing public finances, however, the development after the Austrian labor market was completely opened in 2011 showed that these worries were unfounded. Similarly, as it was with the EU enlargement, the refugee crisis causes a serious apprehension towards influx of foreign migrants and the effects it could have on Austrian economy.

One of the arguments raised is the fact that it is impossible to determine with certainty, who of the people seeking a refugee status are doing so purely from economic reasons. Austrian pro-immigration policy sends a clear signal towards the protection of human rights. However, it is difficult to uncover when this lenient policy is being exploited, especially when we consider

that those seeking asylum often cannot provide personal documentation.

The influx of immigrants from the third countries, which has been escalating since 2014, puts undue pressure on the public finances. The receiving countries aim to place immigrants on the labor market as soon as possible, which, in case of Austria and its potential, is technically feasible. For example, Austrian government is proposing creating 40 thousand new jobs through ecologization of economy. However, barriers such as lack of language skills and lack of sufficient qualifications hinder the potential placement of new migrants to these newly created positions.

Austrian statistics show that 50 % of jobs created since 2010 went to immigrants from the new member states (TASR, 2017). Specifically, it was 105 thousand jobs in 2014, 133 thousand in 2015 and the estimate for 2016 is 170 thousand. Rising unemployment (even though only slightly) puts pressure on the policy makers to adjust their approach. Austrian Chancellor Christian Kern proposes limiting the access of migrants from Eastern and Central Europe to Austrian labor market. Limitations are being placed on the number of accepted refugees. In 2016, the upper limit on the number of accepted claims was 37.5 thousand (the number of submitted claims was around 95 thousand). The new limit for 2017 - 2019 is 35 thousand/year (maximum 80 persons per day), and there is also a limitation on the number of refugees transiting through Austria to another EU country set at 3200 per day.

Immigrants from the third countries cannot satisfy the need for skilled labor on the Austrian market. Their low qualification and lacking language skills mean that state would need to invest into their education and training first, not to mention covering the cost of living. In majority of cases, asylum seekers are employed on positions that do not require higher qualifications, i.e. a low skilled labor such as helping hands on construction sites, cleaning, dishwashing, etc. The domestic population usually has very little interest in these jobs because of low salaries and social status they afford. Closing off the labor market for immigrants would put pressure in raising the wages for these low skilled jobs to make them more attractive for domestic workers.

When it comes to asylum seekers and their motivation for immigrating, The Economist conducted a survey in 2015 that looked into the asylum seekers in Europe and the validity of their claims according to the Convention Relating to the Status of Refugees. This survey concluded that three quarters of asylum seekers truly come from war-torn countries, however there are differences between the states (for example 81 % legitimate claims in Greece significantly differs from 46 % in Italy). If the asylum seeker's claim is denied, such person should be deported and returned to their country of origin, however, statistics show that on average only around 40 % of asylum seekers whose claim has been denied return back to their country.

Refugees put pressure on public finances in any receiving country, be it additional cost of healthcare, cost of asylum processes, living expenses, family benefits, education, language courses, interpreting, integration and active employment policy and transportation cost in case asylum is denied (900€ per month, 10,724€ per year – Die Presse). One quarter of refugees coming to Europe are younger than 15, another 27 % is between 16 and 24 years of age, and both these age groups require education. While the cost of education in Austria is on average twice as high as in Slovakia, when compared with other EU or OECD it oscillates around the average values. In general, refugees finish their education in a shorter time than the domestic population, since they want to become independent and find a job as soon as possible, and inadequate education is one of the main hindrances to that. The overall state of education in countries, which refugees are coming from (Afghanistan, Syria, Iraq, Eritrea, etc.), is incomparable to that in EU. 82 % of women and 55 % of men (53 % of people under 25) in Afghanistan cannot read or write. Even though the situation in Iraq is more positive, 38 % of population still do not have formal education. When it comes to Syria, ILO statistics (2013) show

that 10 % of men and 22 % of women are illiterate. 15 % of refugees do not have basic education, 65 % has finished elementary or high school, and only 20 % have college education. Low level of education combined with not speaking the language creates the probability that asylants will re-main unemployed, what is confirmed by Austrian statistics, according to which the employment rate of refugees oscillates between 25 and 38 %. Historically, the predictions of refugees' employability within 5 years are not positive. If we use the influx of refugees into Austria in 1985 as a reference, only 50 % found employment within the first 5 years and 70 % only within 15 years.

On the other hand, migrants coming from the countries of Eastern and Central Europe are already educated and qualified, and the majority of them is between 21 and 35 years old. Therefore, they are in a time of their life when their productivity is the highest. The unemployment rate of foreigners in Austria was 11.3 % in 2018, which was the highest rate during the studied period. However, this negative trend was influenced by the migration crisis and migrants from countries with low levels of education, which raised this rate by roughly 4,3 percentage points. Immigrants from Eastern and Central Europe are usually coming to Austria with an already secured work position, and Austria is thus gaining skilled workers without having to spend money on them, since the costs of their education, social coverage and healthcare have already been paid by another state from its public finances.

In addition to gaining a new source of labor force, immigration also improves receiving country's reproductive potential. While the Austrian natality was 1.3 in 2013, the birth rate among the immigrants was 1.9. However, higher natality does not mean that immigrants receive more family benefits. According to the Austria's Federal Ministry of Labor, Social Affairs and Consumer Protection, immigrants receive less social benefits than the Austrian average. On the other hand, immigrants contributed to the compensation fund with 460 mil. € In 2017, the immigrants were on average 13,6 days on a sick leave, which does not exceed the overall average. The health insurance companies received 12.8 billion € in 2017, 7.62 % of which (891 mil. €) was paid for by immigrants. On the other hand, only 41.3 mil. € was paid back to immigrants in the form of sickness benefits. In general, each employed immigrant brings extra 2400 € per year into the Austrian budget. In case an immigrant builds a family with an Austrian citizen, this contribution rises to 2600 € per year. From an economic point of view, immigrants from Eastern and Central Europe bring more resources into the state budget than they take from it.

5 Conclusions

Creation and analysis of modeling approach to the assessment of the balance of losses and benefits of the two migration flows say in favor of benefits which create working immigrants from Eastern and Central Europe in Austria. On the other hand, workforce migration abroad represents loss of economic values as well as a significant part of the development potential for source countries.

Migrants from refugee crisis represent increased demands on public finances associated with their protection, asylum procedures, the process of economic and social integration, mainly for Austria. Rate only economic losses and benefits of immigration in this category of immigrants is inadequate. Human life represents highest value, therefore it is not possible to express it in economic categories.

Model assessment of economic losses and the benefits of migration to Austria cannot create comprehensive view of the actual balance of profits and losses for the state and society. It is not giving a complete and broad picture of this phenomenon in the system of economic and social processes and does not correspond to long-term goal of economic and social development of the society. The complexity of migration requires the assessment of the economic and social values of the society in view of demographic, cultural, psychological and moral.

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Primary Paper Section: A**Secondary Paper Section: AH**

THE SLOVAK VERSION OF MMPI-A

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The study presents The Minnesota Multiphasic Personality Inventory for Adolescents - MMPI-A and describes the process of verifying the psychometric characteristics of its Slovak version. A sample of 931 adolescents aged 14 to 18 years was verified through content, criterion and construct validity, as well as reliability such as stability over time and internal consistency; and the applicability of US standards to the Slovak population was tested. The results confirmed the psychometric properties of the Slovak version of MMPI-A and pointed out the need to create their own standards.

Keywords: MMPI-A, adolescents, validity, reliability

1 Introduction

The Minnesota Multiphasic Personality Inventory for Adolescents - MMPI-A is currently one of the most widely used psychodiagnostic methods for the assessment of adolescent personalities in the USA and worldwide. The MMPI-A was established in 1992 as a version of the MMPI for adolescents from 1943. Archer et al. (1) report that the MMPI-A is the third most commonly reported method after the Wechsler Intelligence Scale and the Rorschach Test. Archer and News in 2000 (1) addressed 346 psychologists working in clinical and non-clinical conditions in the USA. The MMPI-A was among the ten most commonly used methods for the assessment of adolescents and was the only objective method in the top ten (2).

The reason for the extensive use of MMPI-A is the high validity of testing provided by validation scales and the wide diagnostic scope given by the 69 scales. It enables the complex understanding of adolescent personality in both normal and pathological conditions.

Personality testing of adolescents is crucial in psychology, it has also proven important in the examination of self-harm within the project "Self-Harm: The Definition, Prevalence, Influencing Factors and Implications for Clinical Interventions", which needed to examine this phenomenon in relation to personality (3). For this reason, it is necessary to validate the MMPI-A for our requirements.

1.1 Minnesota Multidimensional Personality Inventory for Adolescents: MMPI-A

The MMPI-A is a version of the original MMPI adapted for the adolescent population. The MMPI was first seen in the late 1930s as the work of Stark Hathaway, a clinical psychologist, and Charley McKinley, a neuropsychiatrist. The authors published the first study in 1940. The primary purpose of the MMPI was to diagnose psychiatric diseases. In the 1950s, it had already become the most commonly used inventory of personality in the USA. Its use has been extended to jobseeker diagnostics for jobs that require stable mental health such as police officers, airplane pilots, etc. At the same time, it has become widely used in education, research, neurology, medicine and forensic practice to assess drug and alcohol addicts, delinquent adolescents, prisoners, military personnel, medical patients, people with chronic pain and brain injuries, post-traumatic stress disorder, etc. The MMPI has also been widely used outside the USA. By 1992, 140 translations of the MMPI had been made in 46 countries. Butcher and Owen (1) report that the MMPI was used in 84% of personality research projects and Butcher (1) reports that over 10,000 books and articles on the MMPI have been published. Hathaway (1, 2, 4, 5, 6) lists the ease of administration, the high test validity given by validation scales that are capable of determining the tendency to provide a misrepresentative response, the large number of studies that

confirm the psychometric quality of the inventory, the large number of publications that provide interpretative principles, and a set of MMPI items that is clinically relevant to different cultures and able to reflect the psychopathology of all cultures studied so far as the major reasons for the widespread use of the MMPI.

Since its inception, the MMPI has also been used to assess the personality of adolescents. However, gradually there arose a need to revise the test, so in 1980, a MMPI re-standardization committee was formed, consisting of W. G. Dahlstrom, J. N. Butcher and J. R. Graham. C. L. Williams was later invited to develop the adolescent version, as well as A. Tellegen to develop the T-score (7). The main reasons for the development of the MMPI version for adolescents was the need to develop standards for the adolescent population, as well as a need to update and specify the test items (8):

- some of the MMPI items were not suitable for adolescents, while other relevant items were missing,
- the need to develop scales focused on the problem areas specific to this developmental period – school and family problems, substance abuse problems, eating disorders, suicidal tendencies,
- the need to simplify the wording of items,
- the need to reduce the number of items.

After the re-standardization, a version of MMPI-A was developed consisting of 478 items, which form the following scales:

- 5 validation scales: L (Lie Scale), F (F Scale), K (K Scale), VRIN (Variable Response Inconsistency Scale), TRIN (True Response Inconsistency Scale);
- 10 standard clinical scales: Hs (Hypochondriasis), D (Depression), Hy (Hysteria), Pd (Psychopathic Deviate), Mf (Masculinity-Femininity), Pa (Paranoia), Pt (Psychasthenia), Sc (Schizophrenia), Ma (Hypomania), Si (Social Introversion);
- 15 content scales: A-anx (Anxiety), A-obs (Obsessiveness), A-dep (Depression), A-hea (Health Concerns), A-aln (Alienation), A-biz (Bizarre Mentation), A-ang (Anger), A-cyn (Cynicism), A-con (Conduct Problems), A-lse (Low Self-Esteem), A-las (Low Aspirations), A-sod (Social Discomfort), A-fam (Family Problems), A-sch (School Problems), A-trt (Negative Treatment Indicators);
- 6 supplementary scales: A (Anxiety), R (Repression), MAC-R (MacAndrew-Revised), ACK (Alcohol/Drug Problem Acknowledgement), PRO (Alcohol/Drug Problem Proneness), IMM (Immaturity);
- 28 Harris-Lingoes Subscales;
- 3 Social Introversion Subscales.

New scales developed for the adolescent population include e.g. Alienation (A-aln), Conduct Problems (A-con), Low Aspirations (A-las), School Problems (A-sch), Immaturity (IMM), Alcohol/Drug Problem Acknowledgement (ACK), and Alcohol/Drug Problem Proneness (PRO) (8).

The MMPI-A is for adolescents aged from 14 to 18. The basic prerequisites for administration are adequate reading skills, or 7th grade reading abilities, and the adolescent must be able to understand the content of items.

1.2 The Slovak Version of the MMPI-A

Two independent versions were developed during the translation of the MMPI-A into Slovak. The MMPI version for adolescents contains 419 modified items of the MMPI-2, whose psychometric characteristics have been verified on a sample set of Slovak university students. The most appropriate wording has been chosen based on a comparison of MMPI-A translations with MMPI-2 items. Subsequently, the translation went through

linguistic proofreading. The inventory translation includes two aspects: the preservation of literary and content equivalence. The literary equivalence, or literal translation of items, is not sufficient. Items should have the same wording, but maintaining content equivalence is essential. It is necessary for the translator to make an equivalent translation of the test stimuli, as the translated version must contain the same information as the original test to ensure its content validity (9). However, translated words can often have several possible explanations or translations, so it is difficult to capture the original meaning. The basic prerequisite for the applicability of the new version of the inventory in practice is to verify its psychometric properties. Without the validity of a measurement tool, its other characteristics become relatively insignificant (10). The subject of the study is a summary of the analyses of psychometric property verifications – the validity and reliability of the Slovak version of the Minnesota Multidimensional Personality Inventory for Adolescents. We focused on obtaining evidence of the content, criterion and construct validity. We do not perceive the individual sources of validity evidence as separate parts, but rather as single aspects of the whole, whose acquisition leads to the confirmation of the applicability of the method in practice. We have also focused on various aspects of reliability to confirm the reliability of measurement and to verify it is possible to apply US standards to the Slovak population. In the process of adapting the MMPI-A for the Slovak population, we have focused on the following research objectives:

- A. verification of the validity of the Slovak version of MMPI-A:
- verification of the content validity
 - verification of the criterion validity
 - verification of the construct validity
- B. verification of the reliability of the Slovak version of MMPI-A:
- verification of the stability of results over time
 - verification of the internal consistency of the test
- C. verification of the applicability of US standards to the Slovak adolescent population.

2 Methodology

2.1 Research Sample Characteristics

The selection of the research sample was guided by the requirement to create a representative sample of the Slovak adolescent population. The target set consisted of adolescents aged 14 to 18. The authors of the test required the (re)standardization sample to consist of 250 persons of each sex of the general population – a normative set and 200 people with psychiatric diagnosis – the criterion set (11). The age, place of residence and type of school of the adolescents studied were taken into account. Data collection was carried out in two phases. In the first phase, 109 protocols were collected for girls, on which we performed the initial content equivalence analysis. Based on the results, the inventory was adjusted and, in the next phase, the subjects were provided with a modified version of the MMPI-A. To verify the stability of the results over time, we repeated the measurements at an interval of a week on a set of 25 of the subjects. We obtained data from 931 people (706 from the normative set and 116 from the criterion set). Subsequently, we evaluated the validity of the individual protocols. We obtained 258 protocols from boys and 361 from girls in the normative set and 44 boys and 53 girls in the criterion set.

2.2 Data Analysis Methodology

The first step of the analysis was to calculate the gross score for all scales, to assess the validity of all protocols and to exclude those that did not meet the following criteria (12):

- more than 35 items with no response
- F scale score greater than 25

To verify the validity, reliability, and possibility of applying US standards to the Slovak population, we performed several analyses that are specified in more detail depending on the verified psychometric characteristic.

Content Validity Analysis Methods:

To evaluate the content validity of the Slovak version of the MMPI-A, we used the confirmation index – the percentage of affirmative responses to individual items. This index particularly applies to items of a dichotomous nature. We calculated a confirmation index for each of the 478 inventory items. We compared the resulting index with the confirmation indices of the US normative and criterion set. Butcher et al. (12, 4) reported that if the discrepancy concerning the confirmation index is equal to or greater than 25%, the new version item is not content equivalent and consideration should be given to possible causes. Another analysis method we used to verify content validity was the confirmatory factor analysis. Based on this, we applied the extent, to which the individual scales feed four expected factors: General Maladjustment, Over-Control, Social Introversion, Masculinity-Femininity (MF).

Criterion Validity Analysis Methods:

To evaluate the criterion validity of the Slovak version of the MMPI-A, we determined the presence of the diagnosed condition based on the score achieved on the respective scales for individual psychiatric patients. Subsequently, we determined the percentage match between the diagnosis determined by a physician and the diagnosis resulting from the MMPI-A profile.

Construct Validity Analysis Methods:

The construct validity of the MMPI-A is demonstrated by its ability to differentiate the set of boys and girls from the Masculinity-Femininity (Mf) Scale and the normative and criterion set for the other scales. Therefore, we used a comparative research plan for the analysis and compared the gross score of the individual scales of the criterion and normative set, or boys and girls for the Masculinity-Femininity (Mf) Scale. We used the Student T-Test and the Mann-Whitney U-Test on two independent sample sets to compare the data from the sets examined. The comparison of the data was preceded by a calculation of the statistical indicators of the distribution shape of individual variables. Based on the results, we chose to use the parametric (Student T-Test) or non-parametric test (Mann-Whitney U-Test).

Methods of Analysis of Reliability as the Stability of Results over Time:

A correlation research plan was used to assess the stability of the MMPI-A results over time. The aim of the analysis was to demonstrate the reliability of the MMPI-A measurement and the exclusion of results due to other factors. We administered the Slovak version of the MMPI-A to a set of the normative population at a week interval. We matched the first and second measurements using a correlation coefficient.

Methods of Analysis of Reliability as Internal Test Consistency:

To assess the internal consistency of the scales of the Slovak version of the MMPI-A, we calculated the Cronbach's α coefficient for the individual scales examined. The lower limit for internal consistency is considered to be .70 or more, but for the MMPI-A where one scale records various symptoms of a disease or manifestations of a single variable, the value of the coefficient for some scales is lower. Therefore, we used Cronbach's α coefficient values of the US normative set as an objective criterion.

Methods of Analysis for the Application of US Standards for the Slovak Population:

We used a comparative research plan to assess how the Slovak adolescent population scores against the US adolescent population. We used Student's T-Test to compare the data of the sets examined.

3 Results

3.1 Validity of the Slovak Version of the MMPI-A

To verify the validity of the Slovak version of the MMPI-A, we obtained evidence of its content, criterion and construct validity.

When translating a method from one language to another, it is necessary to verify not only the literary but also the content equivalence between the original and translation is preserved. Idiomatic expressions, inversely formulated items or double negatives are particularly problematic. It is also necessary to cope with cultural differences, evaluate them and then adjust, exchange items or adjust the cut-off scores for the scales to which they belong. To verify the content validity of the Slovak version of the MMPI-A, we used a confirmation index, or the percentage of affirmative responses to each inventory item, which we then compared to the confirmation index of the US adolescent population. A difference of 25% or more indicates that the item is not equivalent in terms of content to the original inventory (4). Consequently, the reasons for the discrepancies should be considered, which may be caused by incorrect translation, but also by cultural differences between the original and new population. After evaluating the reasons, the items are adjusted or the cut-off scores for the scales, to which they belong, are adjusted.

The content validity analysis through the confirmation index was performed in two phases. First, the Slovak version was applied using a smaller sample of 100 girls from the Nitra Region. Differences equal to or greater than 25% were found in 44 items, representing 9% of the 478 items.

Subsequently, a modified version of the MMPI-A was administered to a set of 258 boys and 361 girls of the normative set. A confirmation index of $\geq 25\%$ was found in the Slovak girls' sample in comparison to the US scores in 30 items, which is 6.3% of the 478 items. A confirmation index $\geq 25\%$ was found in the set of Slovak boys in 15 items or 3.1%. To analyze the individual discrepancies in items, we determined which scale they belonged to and calculated the number and percentage of items for each scale. For the validation scales, the percentage of the items ranged from 3.3 to 13.3% in the set of girls and from 1.6 to 6.6% in the set of boys. Supplementary validation scales VRIN and TRIN were also included in the analysis. Values of 2% for the VRIN scale and 6.3% for the TRIN scale were found for both girls and boys. For standard clinical scales, values from 1.3 to 10.7% were found in the set of girls and 0% to 8.1% in the set of boys. For content scales, the percentage values of non-equivalent items ranged from 0 to 12.5% for girls and from 0 to 6.3% for boys. For the supplementary scales, values ranging from 0 to 15.1% were found for the R - Repression Scale in the set of girls and from 0 to 6.1% in the set of boys.

The assessment of causes for the discrepancies, in particular, revealed the cultural conditionality of the responses. The Slovak population rated the family environment more positively than the US population, especially in areas such as family support, family cohesion, family conflicts, for example in the set of girls and boys:

79. I very rarely argue with family members.
 119. I believe that at home, I feel as comfortable as most people I know.
 204. Almost all relatives show me sufficient support.
 451. In our family, we have no problem talking to each other.

For other items, the discrepancies were related to the preferred interests:

64. I like poetry.
 131. I'm writing a diary.

Other items concerned emotional stability and somatic manifestations such as:

138. I have never had a seizure or convulsions.
 226. I feel very upset once a week or more often.
 284. Sometimes, I get so upset that I find it difficult to fall asleep.
 374. I swallow without problems.

The Slovak population showed less somatic manifestations and higher emotional stability.

We reviewed all the items in that way. We assume that possible discrepancies due to translation can be found in the items, e.g.:
 95. Someone is biased against me.
 387. I have never had premonitions.

We will carry out additional verification of these items. Overall, however, the analysis revealed a very low number of items with a confirmation index $\geq 25\%$, even when compared to foreign studies. Even with MMPI-2 standardization, values of 10.8% (13), and in the second study 11.6% (14), were found. Gillet et al. (15) report that if the discrepancy value is less than 10%, the results can be considered satisfactory. In Norway, for example, they found content discrepancy in 20% of items (16) and in Turkey in 29% of items (17). The low number of items with high confirmation indices is probably related to the fact that some of the MMPI-A items are the same as those in MMPI-2, while the Slovak version of the MMPI-2 was psychometrically verified. When translating the MMPI-A into Slovak, we also considered the Slovak version of the MMPI-2. Overall, the analysis confirmed the content validity of the Slovak version of the MMPI-A.

As the next step in the process of content validation, we examined the factor structure of the Slovak version of the MMPI-A scales. The factor analysis of the MMPI-A baseline scales, together with basic validation scales: L, F, and K identified 4 factors: Over-Control, Social Introversion, Masculinity-Femininity, and General Maladjustment, (Archer, Archer and Klinefelter (18), the same as those for the MMPI-2 version (12). The analysis was performed separately on the group of girls and boys in the normative set. In both groups, we found that the scales were saturated by 4 factors; the results supported the assumption of the existence of 4-factor structure scales of the Slovak version of the MMPI-A.

The data obtained from both analyses confirmed that, in terms of content, the items of individual scales of the Slovak version of the MMPI-A are equivalent to the original inventory. As further evidence of the validity of the Slovak version of the MMPI-A, we examined the criterion validity.

To obtain evidence of the validity of the Slovak version of the MMPI-A, we focused on verifying the match between the diagnosis by a physician and the score from the respective MMPI-A scales. Since the MMPI-A is also a psychodiagnostic tool, the verification of diagnostic capability is an essential step in its practical use. To investigate the criterion validity of the Slovak version of the MMPI-A, we assumed the existence of a match between the diagnosis by a physician in the criterion set with F 20-29 diagnoses and the scaling scores of Schizophrenia (Sc), Paranoia (Pa) and Bizarre Mentation (A-biz). There was an 83% match between the scores on the selected scales and the diagnosis made by a physician. In addition, there was the assumption there would be a match between the physician's diagnosis and the MMPI-A scaling scores for Depression (D), Psychasthenia (Pt), Anxiety (A-anx), Obsessiveness (A-obs) and Depression (A-dep) in the criterion set with F 30-39 and F 40-48 diagnoses. We found a 79% match for F 30-39 diagnoses and 78% for F 40-48 diagnoses. For the F 90-98 diagnosis set (except for F 93), we expected a match between the physician's diagnosis and the scaling scores on Psychopathic Deviate (Pd), Paranoia (Pa), Conduct Problems (A-con), Low Aspirations (A-las), Cynicism (A-cyn), Family Problems (A-fam), School Problems (A-sch), MacAndrew-Revised Scale (MAC-R), Alcohol / Drug Problem Acknowledgement (ACK) and Alcohol / Drug Problem Proneness (PRO). We found a 78% match.

In practice, we approach the evaluation on a case-by-case basis, assessing the scores of all scales, making their individual configurations and diagnostics more accurate. Even in our analysis, if we looked at individual cases and evaluated matches for individual diagnoses, and not for the whole range of diagnoses, the percentage match would likely increase. At the same time, an adolescent with a certain diagnosis may not have elevated scores on all reported scales, e.g. an adolescent with obsessive compulsive disorder will have an elevated score on the

Anxiety (A-anx) and Obsessiveness (A-obs) Scales, but may not have an elevated score on the Depression (DEP) or Depression (A-dep) Scales, and an adolescent with depressive disorder will have exactly the opposite score elevation. In the analysis, we took into account the set of scales and diagnoses, which automatically leads to a decrease in the percentage match value. Despite the simplification of the analysis, we found matches between 78 and 83%, and therefore we consider the results satisfactory.

Another objective was to verify the construct validity of the Slovak version of the MMPI-A. Construct validity is the degree to which a measuring tool measures the construct it purports to measure. From the results of the inventory construction, it was assumed that the Slovak version of the MMPI-A would differentiate adolescents of the general population – the normative set from adolescents with a psychiatric diagnosis – the criterion set. The MMPI was created using empirical criteria, where the appropriate items were those that differentiated the normative and criterion set.

A sample of 361 girls and 258 boys of the general population and 53 girls and 44 boys who had been diagnosed with a psychiatric condition were analyzed. The criterion set included several different types of psychiatric conditions. Although the sample is not homogeneous in terms of diagnosis, the presence of a diagnosed psychiatric condition leads to an overall increase in the outcome profile (19), therefore we can expect elevated scores on all standard clinical scales except Masculinity-Femininity (Mf) and Social Introversion (Si). From the validation scales, we focused on the F Scale score, which determines the presence of psychopathology. Significant differences in the F Scale scores between the normative and criterion set was expected with a higher average score in the group with a diagnosed psychiatric condition, and this assumption was confirmed.

The Social Introversion Scale was developed in a different way, based on the ability to differentiate between female students, which were divided into two sets according to the results on the introversion-extroversion scale in the questionnaire: the Minnesota Thinking-Social-Emotional Inventory (11, 7), therefore it was not reasonable to expect differences between the sets examined on this scale and it was excluded from the analysis. The Masculinity-Femininity (Mf) Scale was also developed in a different way, based on the differentiation between groups of women and men, so it was expected to differentiate between the groups of girls and boys, from both the normative and criterion sets. Statistically significant differences between boys and girls were found for both the normative and the criterion sets.

For other standard clinical scales: Hypochondria (Hs), Depression (D), Hysteria (Hy), Psychopathic Deviation (Pd), Paranoia (Pa), Psychasthenia (Pt), Schizophrenia (Si) and Hypomania (Ma), we expected significant differences between the normative and criterion sets with higher average scores in the criterion set. In both cases, we found statistically significant differences in all the scales studied, with adolescents with a diagnosed psychiatric condition having a higher average score than adolescents without a diagnosed condition, except for the Hypomania (Ma) Scale. There were no statistically significant differences in either group, both girls and boys. Although an overall profile elevation would be expected in the heterogeneous sample in terms of diagnosis, an additional analysis was performed and subjects with the diagnosed psychiatric conditions F90-98 were excluded from the sample (except F93), and we compared this set with the normative set of adolescents. assumption was confirmed, as the additional analysis revealed a statistically significant difference between the F90-98 (except F93) criterion set and the normative set of the Slovak population. We therefore also deduce the construct validity of this scale. The analysis confirmed the ability of the Slovak version of the MMPI-A to differentiate on the standard clinical scales as well on the Masculinity-Femininity (Mf) and F Scales.

For the content and supplementary scales, an overall profile increase cannot be expected, as scales already create specific spheres. Therefore, the criterion set was divided in terms of established diagnoses. With regard to the number of people with each diagnosed condition, a group of adolescents diagnosed under categories F 30-39, F 40-48 and a group diagnosed under categories F 90-98 were formed, with the exclusion of those diagnosed under category F 93, which includes emotional disorders. For the sets including diagnoses F 30-39 and F 40-48, we expected a difference between the normative and criterion sets on the Depression (A-dep), Anxiety (A-anx), Obsessiveness (A-obs), Health Concerns (A-hea), Alienation (A-aln), Low Self-esteem (A-lse), Social Discomfort (A-sod), Family Problems (A-fam) and School Problems (A-sch) Scales as they represent symptoms of affective and neurotic diseases and problems in school and the family environment. In the group of adolescents diagnosed conditions in categories F 90-98 (except F93), we expected a difference among the Conduct Problems (A-con), Family Problems (A-fam) and School Problems (A-sch) Scales. In all scales examined, the analysis pointed to statistically significant differences among the examined sets with a higher average score in the criterion sets.

For the supplementary scales, the criterion set was split into the same groups as were used for the content scales. We expected differences in the Anxiety (A) and Immaturity (IMM) scores between the normative and criterion sets within diagnosis categories F 30-48, with higher scores in the criterion set, and significant differences in the MacAndrew-Revised (MAC-R), Alcohol/Drug Problem Acknowledgement (ACK), Alcohol/Drug Problem Proneness (PRO) and Immaturity (IMM) Scales between the normative set and criterion set with diagnosis categories F 90-98 (except F 93), with the higher score in the criterion set. In both cases, the analysis pointed to statistically significant differences in the studied scales, with adolescents in the criterion set receiving a higher average gross score than adolescents without a diagnosed condition.

Based on the above results, we confirm the construct validity of the Slovak version of the MMPI-A in all examined scales.

3.2 The Reliability of the Slovak Version of the MMPI-A

In the process to obtain evidence of the Slovak version of MMPI-A reliability, we verified the stability of the results over time. The Slovak version of the MMPI-A was administered to a group of 25 adolescents twice with a one-week gap. The assumption was that there is a positive relationship between the scores of the scales examined for the first and second measurements. A correlation coefficient was found in the validation scales ranging from .63 to .84. For standard clinical scales, the observed correlation coefficient values ranged from .54 to .93. For content scales, we found a correlation coefficient from .54 to .96. For supplementary scales, the correlation coefficient values ranged from .71 to .98. The analysis confirmed that the measurement results are sufficiently determined by the subjects themselves and not by accidental influences.

Within the reliability analysis of the Slovak version of the MMPI-A, we also performed an internal consistency analysis of the standard validation, clinical, content and supplementary scales. The internal consistency of the scale indicates how the individual items of the scale are interrelated. For certain variables, a high internal consistency is desirable, as it indicates that the items in the scale represent the same latent variable. However, in the case of the MMPI-A, some scales represent different aspects of the same variable, e.g. different symptoms of a single disease, or different forms of a single problematic behavior. For example, The Family Problems (A-fam) Scale represents family conflicts, family feelings, communication, coherence and more, therefore we cannot expect a high internal consistency coefficient. To assess internal consistency, the value of the Cronbach's α coefficient of the Slovak version of the MMPI-A scales were compared with the coefficient values of the US sample. The standard validation, clinical, content and

supplementary scales were analyzed. For the validation scales of both the normative and criterion sets, we consider the difference in the L Scale in the normative set of boys, where the coefficient value was .48 in the Slovak sample, but up to .64 in the US sample, to be significant. In the criterion set, the coefficient value in the Slovak sample was higher (.59) than in the US sample (.54), and therefore, based on these results, we consider this scale to be internally consistent compared to the US sample, as well as other validation scales.

Within standard clinical scales, compared to the US sample, lower values for the Cronbach's α coefficient were found in several scales, but the differences were no greater than .10, except for the Masculinity-Femininity (Mf) Scale in the normative set, where the coefficient value was .21 in the Slovak sample and .40 in the US sample. In the process of the MMPI-2 standardization for the Slovak population, we found that the Masculinity-Femininity (Mf) Scale is difficult to translate as it represents interests and leisure preferences, activities that can be described as typically female or male. Since the MMPI originated in a different culture, what is considered to be typically male or female activity in our culture may be understood differently in American culture. E.g. in Italy, they had to completely modify the item "I like cooking", which in the original test represents a typically feminine interest (Pancheri, 1996 by Butcher in 13). In Italian culture cooking is not perceived in the same way, so the item would not obtain the score that would be expected. However, if we look at the confirmation index values of the Masculinity-Femininity (Mf) Scale, we find the content discrepancy in 3 of the 44 items in the group of girls and in only 1 item in the group of boys. In the set of boys, no differences greater than .10 were found in any of the scales in the normative and criterion sets when compared to the US sets, and in some scales, the coefficient values of the Slovak set were higher than in the US set. Therefore, we evaluate the items of this and other standard clinical scales for sets of girls and boys as internally consistent.

There were significant differences between the Cronbach's α coefficient values for the content scales in the normative set of girls, but .34 was measured on Low-Aspiration (A-las) in the criterion set, while the coefficient in the US set was .63. The same results were found for the boys' group. There were no significant differences in the normative set, but in the criterion set, the coefficient value was .26 in the Slovak sample and .63 in the US sample. In view of the result, we analyzed a number of scale items that were found to be non-equivalent in content analysis. In the girls' set, it was two items, and in the boys' set, it was only one item on the Low-Aspiration (A-las) Scale. At the same time, the values of Cronbach's α coefficient in the normative set were identical with the values of the US sample. Statistical analysis did not point to scale items that could be changed or omitted to increase the coefficient value. E.g. when verifying the Slovak version of the MMPI-2, the analysis showed low values in the Anxiety (ANX) .43 and Work Interference (WRK) .56 Scales. Upon a closer analysis of these items, we found that this low value was due to a single item, and for both scales the same item. The statistical analysis also showed that by omitting it the coefficient value in the Anxiety (ANX) Scale would increase to .78 and the Work Interference (WRK) to .79 (14). The item translation was modified. However, for the Low-Aspiration (A-las) Scale, no item appears to be problematic and the internal consistency of the items was confirmed in the normative set. In view of this, it is necessary to verify the internal consistency of the scale on a new sample of adolescents with a diagnosed psychiatric condition.

There were no differences in the Cronbach's α coefficient greater than .10 for all the scales in both the groups of girls and boys and in some scales the coefficient value was higher in the Slovak sample than in the US sample. The supplementary scales of the Slovak version of the MMPI-A can, therefore, be assessed as internally consistent in comparison with the US sample.

3.3 Verification of the Usability of US Standards for the Slovak Adolescent Population

The authors of the test, Hathaway, and McKinley (1943 by Butcher (4), argued that standards developed for the US population were applicable to the population of other countries. The same view is taken by the MMPI-A author, Butcher (4). As part of the standardization process, a number of countries researched these claims for both the MMPI and MMPI-2. However, individual studies pointed to a need to develop standards for the new target population and that it was not possible to apply standards developed in the USA to other populations. For example, Wuts (2002 in (20)) in the standardization of the MMPI-2 in Singapore, found that the new population scored differently in all standard clinical scales except for the Hypomania (Ma) Scale, and similar conclusions were reached by Cheung et al., Savasir, Culha (21, 17), as well as Vavrová and Štefániková (14) in the standardization of the MMPI-2 for the Slovak adult population. Only US standards developed for the Hispanic population of the USA proved to be applicable to other cultures, namely the Hispanic populations in other countries, e.g. Peru, Mexico, Colombia, Spain (22, 23). In the analyses, we conducted we were also interested in how the Slovak adolescent population would score compared to the US adolescent population. The differences in the scoring point to the cultural differences between the populations, which is an important piece of information for the interpretation of the results of other analyses and the consequent inferences and adjustments of the Slovak version. In the standardization of the MMPI-2 for the Slovak population, the researches pointed to the cultural conditionality of, for example, the Negative Treatment Indicators (TRT) Scale. Melišková (9) found that the attitude of Slovak society towards psychotherapeutic treatment is more negative than in the US population, which was reflected by differences in the scoring. Standard validation and clinical, content and supplementary scales were included in the analysis. In most of the scales examined, we found statistically highly significant differences between the Slovak and US sets of adolescents. The results confirmed the need to develop standards for the Slovak population and refuted the claims of the authors of the MMPI for the intercultural applicability of US standards to the Slovak population.

4 Discussion

The MMPI is currently one of the best objective personality assessment methods in the world. The MMPI-A has been equally effective since its inception in 1992. The popularity and widespread use of these instruments is due both to the width of the diagnostic scope of the inventory and the possibility for differential diagnosis, but mainly to the quality of the instrument in terms of its psychometric characteristics. The psychometric properties of the MMPI have been proven many times, as evidenced by the thousands of published studies and their number is steadily increasing. As the authors of the MMPI-A maintained the maximum possible continuity between the original inventory and the new version for adolescents, the study results are applicable to the MMPI-A.

Since the MMPI-A provides a wealth of information about adolescent personality, both in norm and pathology; it is a measurement tool that helps psychology professionals recognize and evaluate adolescents aged 14 – 18. While the MMPI-A is time-consuming to administer, it provides a wealth of information with the use of a single tool. Its potential use extends to all areas of psychological practice. The validity of the results obtained is verifiable through the configuration of the score of the validation scales. Based on these, we can assess whether the protocol is valid and if it is not, it is also possible to determine the type of tendency that has distorted the answers. An elevated score on certain scales of the MMPI-A is a reliable indicator of the tendency towards problematic behavior or the emergence of various problems and diseases. For example, an elevated score on the scales: Conduct Problems (A-con), Hypomania (Ma), Psychopathic Deviate (Pd), Immaturity (IMM), Anger (A-ang) indicate a probability for problematic

behavior. In contrast, a low score on certain scales indicates a low likelihood they will be manifested, e.g. low scores on the Social Introversion (Si) and Psychopathic Deviation (Pd) Scales indicate a low probability of problematic delinquent behavior (8, 12, 24, 7). The MMPI-A also includes a scale that is specifically designed to represent tendencies for alcohol and drug use – Alcohol/Drug Problem Proneness (PRO). The scale represents the expressions of personality and lifestyles associated with alcohol and drug use (25). Other scales state the presence of alcohol and drug use problems, such as an elevated score on the MacAndrew-Revised (MAC-R), Alcohol/Drug Problem Acknowledgement (ACK), or the presence of other problems, symptoms of depression, family conflicts, peer group pressure, delinquent behaviour, eating disorders, symptoms of anxiety and many more. It is the width of the diagnostic image that makes the MMPI one of the world's most widely used measuring instruments. At the same time, the MMPI-A makes it possible to assess the extent, to which the observed phenomena are beyond the norm, which is particularly important in depressive disorders. It also contains items that indicate the possibility of suicide. In addition to the standard MMPI-A scales, it also contains subscales that further refine the analysis. For example, the Psychopathic Deviation (Pd) Scale contains 5 subscales. An adolescent with an elevated score on this scale may also have a high score on the Social Alienation (Pd4) Scale, indicating a rebellion against social rules, but a low score on the Familial Discord (Pd1) Scale and hence have no family-related issues. This conclusion is then supplemented by the results of the Family Problems (A-fam) (1). The MMPI-A allows a detailed analysis of the adolescent's personality and the knowledge of their personality, and this has led to an interest in the development of a Slovak version of the MMPI-A. The verification of the psychometric characteristics of the Slovak version of the MMPI-A was carried out on a representative sample of the Slovak adolescent population with the aim of subsequently establishing a standard for the Slovak population. The criteria for age, type of school and region were monitored. In doing so, we focused on the verification of the content, criterion and construct validity and reliability as indicators of the internal consistency of the inventory and the stability of the measurement results over time. We also carried out an analysis of the applicability of US standards to the Slovak population. The work includes a psychometric evaluation of the Slovak version of the MMPI-A on a sample of the Slovak adolescent population that is representative in terms of age, type of school and region. When collecting data from psychiatric patients, a sufficiently large number of adolescents were obtained for the main diagnostic sets. The analyses provided evidence of the validity and reliability of the Slovak version of the MMPI-A. Through the use of a confirmation index, the content analysis identified the content-discrepant items, but their number was very low, with the discrepancies found predominantly culturally conditioned and not due to incorrect inventory translations. The verification of the MMPI-A content structure confirmed that the standard validation and clinical scales create a 4-factor model in accordance with the original inventory. We also focused on the evaluation of the concurrent criterion validity; in particular, we assessed the conformity between the diagnosis of a physician and scores on the selected scales. A percentage match of more than 77% was found for all established psychiatric diagnoses. The verification of the construct validity was based on the analysis of the ability of the Slovak version of the MMPI-A to differentiate the population diagnosed with a psychiatric condition from those without. The only exception was in the Masculinity-Femininity (Mf) Scale, where the confirmation of the construct validity meant the confirmation of the ability to differentiate between girls and boys. The analysis showed the construct validity of the standard validation, clinical, content and supplementary scales. The ability to differentiate these sets is a basic proof of the validity of the MMPI-A since it was created using empirical criteria to differentiate between the general population and the population diagnosed with a psychiatric condition. In terms of reliability, we observed the stability of the test results over time, showing the reliability of the Slovak version of the MMPI-A. Verification of the internal consistency of the scales confirmed their internal consistency, except for the

Low Aspirations (A-las) Scale in a set of adolescents with a diagnosed psychiatric condition. Additionally, an analysis of the possibility of applying US standards for the Slovak population was performed. However, the analysis also provided useful information on the differences in the scoring of the Slovak and US populations, which also indicate the cultural diversity of these populations. The results confirmed that the Slovak population of adolescents scores differently to the US normative set on a number of scales which implies it is necessary to develop standards for the Slovak population.

5 Conclusions

Based on the results, we can conclude that the analyses provided evidence of the validity and reliability of the Slovak version of the MMPI-A for the Slovak population and its applicability in practice, once standards and interpretative principles have been developed.

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Primary Paper Section: A

Secondary Paper Section: AN

MOTIVATION OF TECHNICALLY-ORIENTED STUDENTS TO LEARN ENGLISH FOR SPECIFIC PURPOSES

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Abstract: The submitted paper discusses motivation towards foreign language learning, specifically motivation of university students towards learning English for specific purposes at the Technical University in Zvolen. In addition, it presents results of questionnaire survey on the mentioned topic. We can conclude that the students perceive the necessity of learning the English language and are aware of its importance in their future career. Furthermore, they believe that the number of lessons of English for specific purposes provided currently in their study is not satisfactory.

Keywords: English for specific purposes, motivation, questionnaire, statement

1 Introduction

One of the key skills of the graduates from technical universities in Slovakia is mastering English or one other foreign language. However, English as the Lingua Franca is preferred in all spheres of science. Main subjects and sciences they deal with during their university studies are complemented by the courses of foreign languages – especially languages for specific purposes. Mastering professional languages extends their possibilities of finding and obtaining interesting job proposals at the labour market. Due to the international tendency and preference, English is taught as the first foreign language in Slovakia. Therefore, this language is the most preferred one at technical universities in Slovakia, where mainly as English for Specific Purposes (ESP) is taught.

The submitted paper is focused on the motivation of technical university students to learn English and especially ESP. The courses are part of their curricula and language exam is a compulsory part of their (predominantly) technical and practice-oriented studies. Our attention was paid to their attitudes, opinions and motivation for learning ESP. In the first part of the paper, essential information on the learner motivation is presented, approaching the importance of internal, as well as external sources of motivation. The second part deals with the results of a short survey carried out at the Technical University in Zvolen, bringing particular outcomes and conclusions.

1 Motivation as a key factor in every language learning (not only for specific purposes)

Learner motivation represents a key factor in foreign language learning, since it determines the learning process and affects indirectly the quality of foreign language knowledge (Jurišević – Pižorn, 2012). It has a great impact on creating and the rate of creating memory traces (Škoda – Doulik, 2011). Therefore, it is an element that ESP teachers have to take into consideration when planning their courses.

Petty (1996) mentions seven reasons why learners want to learn:

- The things I am learning will be beneficial for me – for university students this reason is considered crucial.
- The qualification I will achieve in the study will be beneficial – for students it is important to understand the short-term as well as long-term significance of the curriculum.
- Good study achievements and success increase my confidence – according to Petty, this factor is the strongest one and it is the driving force of the entire learning process. However, it can be also demotivating. Experiencing

success or failure is similar to going around in circles. If the learner experiences success, it evokes satisfaction and brings about self-confidence. Subsequently also the motivation increases leading to further success. Nevertheless, if a student experiences failure, they encounter criticism and the self-confidence and motivation decrease. For every student to experience success it is inevitable to know what to do and that they always can turn to the teacher for advice. Tasks that the learners receive should be manageable and challenging at the same time. This is the reason for establishing the standards very carefully since appraisal for a very easy task will not be appreciated. In this aspect it is crucial to assign tasks according to students' individual skills. This way the teacher creates favourable conditions also for weaker students to succeed.

- When my achievements will be good, the teacher and peers will respond positively – it is natural that the learners want to feel appreciated by the teacher and peers and more successful than the others. However, the competition has to be tackled very carefully since it can lead to decreasing the motivation and self-assessment of other students. The teacher must not tolerate demonstration of superior acting of the more successful students over the less successful ones.
- When I will not study, the consequences will be negative – negative consequences are usually in the form of a low grade. A test announced in advance can have a strong motivation character. When the students know that the teacher “checks” on them regularly, they will do their best and pay attention in the classes. Nonetheless, it is also important to keep in mind the factor of success and failure.
- Things that I learn are interesting and evoke my curiosity – this factor is closely associated with the above mentioned factors.
- I find the classes interesting – when preparing the classes the teacher should keep in mind students' interests, they will find the curriculum much more interesting.

Learner motivation in foreign language teaching and identifying the factors that affect the learning process was discussed for the first time by the Canadian psychologist Gardner (1985, 2001). Within his studies, Gardner designed a socio-educational model of learning foreign languages with four main factors affecting the foreign language teaching:

- The influence of the outside environment,
- Individual differences among the learners,
- The environment and context where the foreign language teaching and learning takes place,
- Achievements in foreign language learning.

Later studies into motivation of foreign or second language learning indicated that the character of Gardner's model had some drawbacks (Dörnyei 2001, Oxford – Shearin 1994) as the model was focused mostly on the general components of motivation linked to the social environment, not to the specific environment where the foreign language learning and teaching takes place. In addition, Gardner's model missed a more closely specified cognitive aspect of motivation towards learning. Following various motivational studies in learning various languages, in various contexts and in various age groups Dörnyei (2001) stated that the specific character of social and pragmatic dimension of motivation towards foreign or second language learning always depends on who, which language and where they are learning the language. Following this conclusion, he designed a concept of foreign language learning motivation comprising three levels:

- Language level (various aspects associated with the specific language, such as culture conveyed by the language; community

where the language is spoken and potential usefulness of proficiency in that language);

- Learner level (need for achievement, self-confidence);
- Learning situation level (course-specific motivational components, teacher-specific motivational components, group-specific motivational components).

ESP teachers are well aware of the difference of the methodology between teaching General Purpose English and English for Specific Purposes. According to Dudley-Evans and St. John (1998), the ESP teacher sometimes becomes more like a language consultant, enjoying equal status with the students who have their own expertise in the subject matter. ESP is designed to meet specific needs of the learner. ESP teaching should reflect the methodology of the disciplines and professions it serves and it is centred on the language, skills, discourse and genres appropriate to these activities (Dudley-Evans - St. John, 1998, 4-5). All these particularities of ESP teaching and learning should be considered when thinking about the students' motivation to learn ESP.

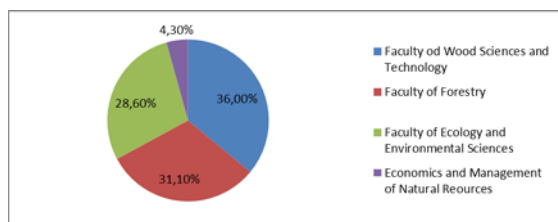
2 Results of the questionnaire survey

The survey was conducted of the students of the Technical University in Zvolen, Slovakia. The main aim of a short questionnaire was to find out students' opinions on the necessity of mastering ESP for their studies, as well as future career. The importance of ESP and especially the source of motivation to study ESP was asked for.

2.1 Characteristics of the respondents

The questionnaire was filled in by 161 students (62% of them were men, and 38% were women) from the following faculties of the Technical University in Zvolen, Slovakia:

- Faculty of Forestry (50 students, i.e. 31.1 % of the respondents);
- Faculty of Wood Sciences and Technology (58 students, i.e. 36 % of the respondents);
- Faculty of Ecology and Environmental Sciences (46 students, i.e. 28.6 % of the respondents);
- University study programme Economics and Management of Natural Resources (7 students, i.e. 4.3 % of the respondents).



Graph 1: Division of the respondents according to the faculties.

Students of the Technical University in Zvolen have a possibility to study ESP during several semesters, in several courses. However, the number of courses depends on the study specialisation, but all the students can enrol for compulsory and elective ESP courses.

2.2 Assessment of the students' responses

The questionnaire contained the following questions:

1. How many hours a week do you spend reading professional texts in English (except for university lessons, i.e. free time reading)? Please, select one of the options:

- a) 0 – 1.0 hour
- b) 1.1 – 2.0 hours
- c) 2.1 – 3.0 hours
- d) 3.1 hours and more

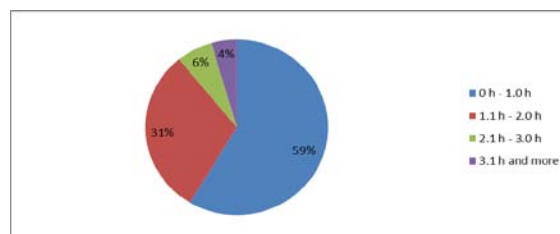
2. Assess the following statements on the scale from 1 to 5.

(Legend: 1 – strongly disagree, 2 – disagree, 3 – unsure, 4 – agree, 5 – strongly agree)

- a) Mastering ESP is very important.
- b) I will benefit from mastering ESP when writing my final thesis.
- c) Mastering ESP will be necessary for my future job.
- d) During my university studies, there were enough ESP courses.

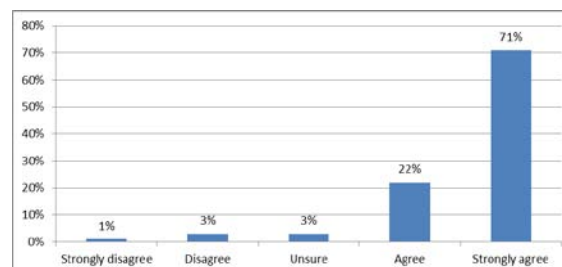
3. What motivates you to study ESP? Please, specify.

To answer the first question “How many hours a week do you spend reading professional texts in English (except for university lessons, i.e. free time reading)?”, the students could choose from four options. The majority of the respondents chose the first option, i.e. they read less than one hour in their free time. 31 % of the students read more than one hour but less than 2 hours. More than 2 hours long reading is quite rare, only 10 % of the asked students spend their free time reading professional texts for more than 2 hours a week.



Graph 2: Answers to the question “How many hours a week do you spend reading professional texts in English?”

When assessing the second question, we came to quite positive conclusions. First of all, we wanted to find out if mastering ESP is important for the students, so if they understand the necessity of knowledge of professional or technical language. We were pleased to find out that majority of the respondents (71%) strongly agreed that mastering ESP is very important for them. It means that they understand the potential ESP has for them. Therefore, we can suppose that their motivation to study ESP is higher, since they understand importance of the ESP courses. 22 % of the asked students agreed with the statement. In a nutshell, 93 % of the students consider acquiring ESP an important part of their studies. More detailed evaluation of this statement by the students can be seen in the Graph 3.

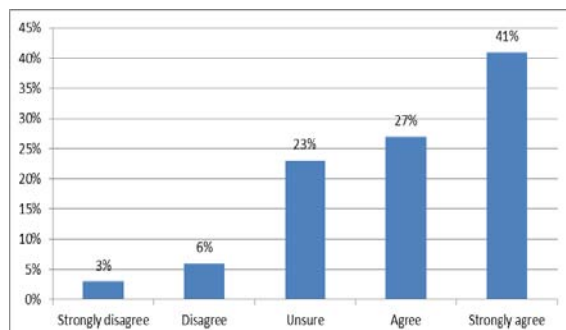


Graph 3: Do you agree with the statement “Mastering ESP is very important”?

The following statement is linked to the previous one. We asked the respondents if they agree with the sentence: “I will benefit from mastering ESP when writing my final thesis.” This statement was aimed at finding out if they consider mastering ESP important for their university studies. The majority of the students (totally 68%) can see the benefit of mastering ESP for the preparation of the final thesis. This is a very important point, because it means that students use the professional language (e.g. reading scientific literature and searching for new and significant information). Thus the ESP is not only a goal of ESP courses, but it is also a tool to gain and apply information. This is the

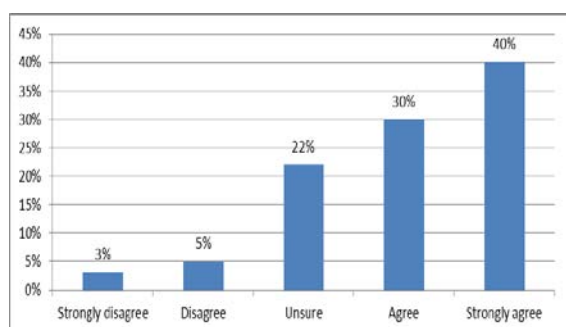
skill students will most probably use at their future job positions and university studies allow them to train it.

23 % of the students were unsure about the usefulness of ESP related to their final thesis. We assume that those were the students of the first or second year of the university studies and are inexperienced so far with final thesis preparation.



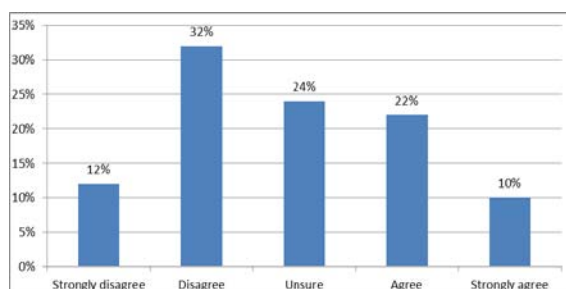
Graph 4: Do you agree with the statement "I will benefit from mastering ESP when writing my final thesis"?

We supposed that next statement "Mastering ESP will be necessary for my future job" would be probably clearer to assess for the students who are in the last year or next-to-last year of their studies. However, majority of the students (including the students from the first years of university studies) already considers the necessity of mastering ESP as something that can help them to find better work positions at the labour market in the future and can be an important part of their career. As we can see from the following graph (Graph 5), 70 % of the respondents agree with the statement, while 40 % of them even strongly agree.



Graph 5: Do you agree with the statement "Mastering ESP will be necessary for my future job"?

Assessment of the last statement "During my university studies, there were enough ESP courses" brought important information for us, teachers of ESP. From the students' responses we can conclude that the number of courses should be higher, since nearly 44 % expressed their disagreement with the statement. To sum up, students are aware of the necessity of studying ESP.



Graph 6: Do you agree with the statement "During my university studies, there were enough ESP courses"?

The last question of the questionnaire ("What motivates you to study ESP? Please, specify.") was the open one. We left the

space for the students to express themselves freely and openly. We read carefully all their answers and tried to divide them into basic categories we created for this purpose. The most common response, given by almost 75 % of students, was that the strongest driving force for them is the necessity to master the English language for their professional career. The second most often mentioned motivation driver was the teacher of the foreign language, with almost 48 % of students claiming this. Eventually, the third most often mentioned reason, with approximately 6 % of responses, was represented by teachers of other professional courses.

3 Conclusion

The assessment of the answers from the short questionnaire, circulated to the students of the Technical University in Zvolen, brought us to several conclusions. Technically-oriented students come into contact with foreign languages, especially with ESP, during their university studies, and ESP is a goal for them, as well as a useful tool for the acquisition of the latest information from foreign authors. They can see clearly the necessity of mastering ESP for their successful studies, as well as future career after graduation. We believe that their inner motivation to study ESP is well-based.

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Primary Paper Section: A

Secondary Paper Section: AM

MOTIVATION OF CZECH STUDENTS OF SECONDARY TECHNICAL SCHOOLS TO STUDY ENGINEERING

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This paper was written within the project of the Technology Agency of the Czech Republic called "Education in engineering and its optimisation for the needs of the labour market", registration number TJ 02000083, carried out at the Faculty of Education at the University of Ostrava between 2019 and 2021.

Abstract: The main aim of the paper is to introduce the recent findings of the motivation of secondary technical schools' students in the field of engineering. Technological progress requires higher quality and quantity of human resources working in engineering field, however, the interest of youth in studying the field is falling steadily. A project "Education in engineering and its optimisation for the needs of the labour market" led by the Technical Agency of the Czech Republic (TAČR), which is implemented by the Faculty of Education at the University of Ostrava together with the National Engineering Cluster is focused on discovering the factors influencing the choice of these fields, students' satisfaction with their studies, study aspiration and manifestation of an in-depth interest in technical fields. The results of a pilot research confirm that almost one half of the students believe they possess aptitudes for engineering professions.

Keywords: aptitudes for profession, labour market, motivation, secondary education in engineering, engineering practice.

1 Introduction

Engineering generates a significant part of the gross domestic product in developed countries. It requires qualified labour force educated at secondary technical schools and universities specialised in engineering. These schools are not currently considered as adequately attractive and desirable by children and young people and thus do not produce enough graduates for professional practice. That is why pupils' motivation to study at secondary schools specialised in engineering is rightly an important research subject. This paper focuses on the analysis of factors influencing the choice of professional education and selected motivational factors for studying the field of engineering in one region of the Czech Republic.

1.1 Motivation as a Dynamic Part of a Personality

Motivation is an essential psychological and pedagogical topic, as evidenced by a significant number of theoretical approaches (Madsen, 1972; Cofer, Appley, 1964). Motivation toward studies in current circumstances should be examined within the context of the recent view on the education of 21st-century children. It is possible to understand contemporary children via four topics and their subtopics, covering both the positive and negative sides of the heart of the recent childhood phenomenon. The topics include: physical health (Play and activities, Eating habits, Alcohol and drug consumption, Sleep), emotional well-being (Social/emotional skills, Stress, Anxiety and depression, Suicide), digital technologies (Digital divide, Information as power, social networks, Cyber risks) and families (Changing family values, Diverse families, Ageing parents, Role of peers) (OECD, 2019).

Motivation is recognized as a person's varied set of motives towards a particular activity, work, entertainment or effort. It is an intrapsychic process resulting in an internal state, motive (Nakonečný, 1996). Rousing interest in activity also affects school education. At schools, students are encouraged towards specific behaviour, attitude, experience, overcoming obstacles, but also reducing certain displays, which then leads to an independent performance and potential growth of activity, understanding or sharing of knowledge, experience, gain or challenges to get to know the unknown. Motivation can be understood as a set of momentums in activities, experience, behaviour and personality. It helps students to recognise their primary interest at school and can also influence their direction towards a selected profession.

It is necessary to regard motivation as a complex process which plays a vital role in all stages of a person's life-long education, work orientation and personal experience. There is a close link between the motivation of each person and social motivation, which reflects social aims, cultural, value and ethical potential, needs and certain stimuli resulting in impulses in the behaviour of individuals, groups, nations and higher social units.

Motivation is not an isolated element; it can be understood as a coherent and complex process instigated by an initial motivational state which reflects a particular deficit in the physical or social being of an individual. The removal of the deficit is then experienced as a satisfaction (Nakonečný, 1996). Motivated students are more likely to achieve their professional growth goals throughout their active participation in studying, interest in technology, communication with the professional public, interest in professionally oriented engineering activities, teamwork in solving problems, interest in specialised literature and interaction with new technologies.

An experiential professional education focusing on the development of critical thinking and functional literacy is a crucial motivational factor as well. Ježová (2013) observes that motivation is closely related to emotions as they stimulate one another during activity.

Motivation is also closely tied to performance, but not only in the sense of competing with other individuals. Performance motivation is also manifested in a person's attitude to study and work. Work motivation expresses a worker's general approach to performed activities through specific tasks, a position held in the organisation and related employee role. It is manifested by performance, interest and effort in the work activity (Štikar, Rymeš, Rieger & Hoskovec, 2003).

1.2 Sources and Causes of Motivation

According to biological theory, the primary sources of the motivation of human behaviour are instincts which significantly influence personality both physically and mentally. However, not all students are motivated by them to perform activities with the same momentum, with the same intensity in the school environment, at home and in the after-school environment in a broader context. "Motivation is related to human needs, time, hope, aims, performance, self-respect, interest in an activity, and searching for causes of success and failure" (Mareš, 2013). Needs and motives are internal mental states. A need is a state of psyche, which can influence, e.g. a student's decision whether they will finish their studies or not. A need expresses an initial motivational state, which, through experience, finds a particular activity and thus a behaviour pattern. A motive expresses the content of satisfaction. Students are encouraged to finish their studies so that they are happy with themselves.

The need to know is characterised by a hunger for knowledge, a desire to broaden mental horizons. It is occasionally called a cognitive or intellectual need. It is closely linked to the overall level of intelligence. It is a desire to learn and educate oneself. The need for knowledge is also connected with the need for manipulation, play, experimenting and work activity (Kohoutek, 2002).

Generally, there are several motives that influence one another. Motivation sources can be external agents (family, school, club, place of residence, set of economic, political, cultural circumstances) and internal agents (interests, aims, knowledge, abilities, perseverance, responsibility and health status, which are manifested during a game, work, learning process and hobbies) (Čáp & Mareš, 2001). Except for motivation sources, people are also interested in causes of motivation, that may be physiological processes happening in the brain and body, as well

as cultural and social interactions with individuals in our environment (Nolen-Hoeksema, 2012).

1.3 Research of Factors Influencing Students' Motivation to Study

McClelland (1975), who studied performance motivation, presented his respondents with pictures with ambiguous interpretation and asked for a narrative reaction via story. He discovered that stories from individuals with high performance motivation contained motives related to a specific effort, success etc. On the other hand, the narrations from individuals with lower performance motivation contained motives of boredom, speculative behaviour, lies. The research on the intensity of motivational incentives for an activity in Czech, English, Japanese, German, New Zealand and Scottish students (the research sample consisted of 1 256 students, 360 of which were Czech) showed that students' motivation sources statistically differed to a significant degree, and Czech students demonstrated a higher intensity of motivation sources (except fear of failure). They expressed their motivation to study regularly using the following statements: "I want teachers to like me, I want to be better than others, the things I learn interest me, I know that learning is my duty, I feel well when I learn something well, I want to have a good job (profession) in the future, my parents want me to do well at school" (Pavelková, Hrabal & Hrabal, 2010).

The examination of students' motives to study has been discussed by Šebestíková (2013). She compared motives to study in Year 4 students (graduation year) at two technical secondary schools; one specialised in engineering and the other in design. She discovered that more than half of the respondents (57%) were not happy with their choice of a secondary school and would instead select a different field at a different school. It is also worth noting that more than half of the respondents would like to study at university other than technical and that important motivation agents influencing the choice of a school can be students' interest in technical specialisation and proximity of the school to their home.

Svatoňová (2016) analysed motivation to learn in lower-secondary schools' pupils (aged 11-15) in the Czech Republic. She asked which subjects are their favourite and which are not and to what extent the motivation to learn is related to pupils' boredom at school. She states that pupils prefer organised activation learning which prevents boredom. External and internal motivation to study is almost even by the respondents (49.9%). She regarded the following pupils' statements about the internal motivation factors to study: "I enjoy it, I want to learn new information, I want to make my parents happy, I want to make my teacher happy, I am happy with good results, I want to be the best in class, I like the subject". She regarded the following pupils' statements as the external motivation factors to study: "I have to study because of my parents, teachers, I want to get to university, to get a good job, education is important in our society, I want to equal my parents".

In her research, Polom (2018) identified relations between the locus of control and motivation for success in students. She discovered that the increase in the motivation for success corresponds with a more internal locus of control and vice versa, the more external the locus of control, the lower the motivation for success. In other words, the more people are persuaded that they are able to control the results of their activity, the more they are motivated to succeed.

1.4 Research of Motivation Factors in Secondary Engineering Schools' Students

Selected factors of motivation to study in secondary technical engineering school students, or more precisely, factors influencing the choice of such a school or starting this type of profession, comprised the research subject. The main aim was to pilot authors' research tool usable for broader research and, at the same time, to collect primary data for the analysis of relevant

curricular documents and vocational and consultancy activities carried out in other schools specialised in the same field.

1.5 Research Methodology

A questionnaire used for data collection consisted of 29 items, (20 items were closed and nine open or half-open). For the purpose of this study, seven items were selected, and their phrasing is presented together with the results. The collection of data was carried out in April 2019 on a purposely selected sample of 79 students from Year 4 (graduation year) at the end of their secondary school education. The results are presented in a descriptive form as well as in the form of statistically assessed relations of selected variables.

1.6 Results of the Descriptive Analysis

Question 1: Was the secondary school you study at your first choice on the application form? (yes/no)

The first (dichotomous) item was examining whether the secondary technical engineering school completed by a school-leaving exam (maturita exam) students are currently finishing their studies at was their first choice.

It is apparent from the graph below that for 53 respondents (67.09%) the secondary technical engineering school they are currently finishing their studies at was their first choice on the application form. On the other hand, for 26 respondents (32.91%), the secondary technical engineering school was not their first choice on the application form. In other words, a greater number of respondents were first decided to study at a secondary technical engineering school completed by a school-leaving exam (maturita exam) which is specialised in computer technology and offers opportunities to work in the automotive industry.

Question 2: Do you think that you have the aptitudes for the given profession? (yes/no)

The second (dichotomous) item of the questionnaire was examining whether the secondary technical engineering school completed by a school-leaving exam (maturita exam) students think they have aptitudes for the chosen profession.

The graph below shows that 39 respondents (49.40%) stated that they think they have aptitudes for the chosen profession, and 40 respondents (50.63%) stated that they do not think they have aptitudes for the chosen profession. Half of the respondents are convinced that they have aptitudes to perform a profession specialising in engineering in the future.

Question 3: Do you want to continue studying engineering at university after finishing the secondary school? (yes/no)

The third (dichotomous) item of the questionnaire aimed to find out whether secondary technical engineering school students want to continue studying engineering at university.

44 respondents (55.70%) want to continue studying engineering at university after finishing their secondary school, and 35 respondents (44.30%) are not interested in studying engineering at university, and they can thus represent a staff potential for engineering companies and organisations.

Question 4: In your free time, are you interested in engineering, e.g. machines, cars, technology? (yes/no)

The fourth (dichotomous) item of the questionnaire was formulated to find out whether students are interested in engineering, e.g. machines, cars or technology in their free time.

It is apparent from the summation of respondents' answers that 52 of them (65.80%) are interested in engineering, e.g. machines, cars or technology in their free time and 27 respondents (34.20%) stated that they are not interested in engineering, e.g. machines, cars or technology in their free time. It can be noted that school and after-school activities of the significant share of the research sample are related to the studied field and, in the future, can become an aptitude for the engineering profession.

Question 5: In technical subjects, do you figure out certain information:

on your own / only from the teacher's lecture? (yes/no)

The fifth (dichotomous) item was examining whether secondary engineering technical school students figure out information from technical subjects on their own (individual work or self-study) or only by listening to teacher's explanation in the class. This question was answered positively by 35 respondents (44.30%), that means they figure out certain information in technical subjects by self-study activities. Forty-four respondents (55,00%) stated that they learn information from technical subjects only by listening to a teacher's lecture.

Question 6: Do the studies at the secondary school correspond with the ideas you had before entering the school? (yes/no)

The sixth (dichotomous) item provided data about whether the studies at the secondary school correspond with ideas students had before entering the school.

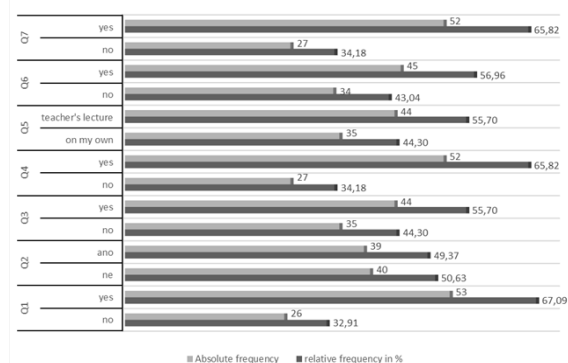
A larger number of respondents (45; 56.96%) stated that studies at the school correspond with ideas they had before entering the school. On the other hand, 34 respondents (43.04%) stated that studies at the school do not correspond with the ideas they had before entering the school.

Question 7: Do you want to be successful at school? (yes/no)

The seventh (dichotomous) item aimed to examine whether of the secondary technical engineering school students are motivated by achieving success in their studies.

Two-thirds of respondents (52, that is 65.82%) stated that they want to be successful at school. On the other hand, 27 respondents (34.18%) stated that they do not want to be successful at school. The analysis of other items of the questionnaire will examine which other sources of motivation worked and supported students in their efforts to finish their studies at the secondary school.

Graph 1: Frequency of answers to Question 1-7



1.7 Results of the Statistical Analysis

The research survey was also focused on discovering a possible link between selected variables. Hypotheses and results of their verification are mentioned below.

Hypothesis 1: Students who think they have aptitudes for their chosen profession want to be successful at school more frequently than students who do not think so.

Tab. 1: Detected and expected frequencies related to H1

Pearson's chi-square = 9.0173 = 1 significance p= 0.002674		degree of freedom = 1	
Question 2	Question 7 (yes)	Question 7 (no)	Line totals
yes	32 (25.671)	7 (13.329)	39
no	20 (26.329)	20 (13.671)	40
Column totals	52	27	79

Given that the calculated value of chi-squared is higher than the value of the test criterion and the value of significance is lower than the chosen significance level of 0.05, it has been proved that there is a statistically significant relationship between answers to both questions.

Hypothesis H1 "Students who think they have aptitudes for their chosen profession want to be successful at school more often than students who do not think so" has been confirmed.

Hypothesis 2: Students who indicated the secondary school they are studying at as their first choice on the application form state that they will continue studying engineering at university more frequently than students who did not indicate this secondary school as their first choice.

Tab. 2: Detected and expected frequencies related to H2

Pearson's chi-square = 0.53607 = 1 significance p= 0.46407		degree of freedom = 1	
Question 1	Question 3 (yes)	Question 3 (no)	Line totals
yes	28 (29.519)	25 (23.481)	53
no	16 (14.481)	10 (11.519)	26
Column totals	44	35	79

Given that the calculated value of chi-squared is smaller than the value of the test criterion and the value of significance is higher than the chosen significance level 0.05, it has not been proved that there is a statistically significant relationship between answers to both questions.

Hypothesis H2 "Students who indicated the secondary school they are studying at as their first choice on the application form state that they will continue studying engineering at university more frequently than students who did not indicate this secondary school as their first choice" has not been confirmed.

Hypothesis 3: Students who are interested in technology in their free time report that they want to continue their studies at a technical university after graduating from high school more frequently than students who are not interested in technology in their free time.

Tab. 3: Detected and expected frequencies related to H3

Pearson's chi-square = 5.6238 = 1 significance p= 0.017726		degree of freedom = 1	
Question 4	Question 3 (yes)	Question 3 (no)	Line totals
yes	42 (37.519)	10 (14.481)	52
no	15 (19.481)	12 (7.519)	27
Column totals	57	22	79

Given that the calculated value of chi-squared is higher than the value of the test criterion and the value of significance is lower than the chosen significance level of 0.05, it has been proved that there is a statistically significant relationship between answers to both questions.

Hypothesis H3 "Students who are interested in technology in their free time report that they want to continue their studies at a technical college after graduating from high school more often than students who are not interested in technology in their free time" has been confirmed.

Hypothesis 4: Students who think that teachers of vocational subjects lead them to think about a technical problem report that

the school deepens their interest in the field of study more often than students who do not think so.

Tab. 4: Detected and expected frequencies related to H4

Pearson's chi-square = 7.2880 = 1		degree of freedom significance p= 0.006942	
Question 8	Question 9 (yes)	Question 9 (no)	Line totals
yes	42 (37.595)	24 (28.405)	66
no	3 (7.405)	10 (5.595)	13
Column totals	45	34	79

Given that the calculated value of chi-squared is higher than the value of the test criterion and the value of significance is lower than the chosen significance level of 0.05, it has been proved that there is a statistically significant relationship between answers to both questions.

Hypothesis H4 "Students who think that teachers of vocational subjects lead them to think about a technical problem report that the school deepens their interest in the field of study more often than students who do not think so" has been confirmed.

Main conclusions of the research survey are:

1. For two-thirds of the respondents, i.e. 53 (67.09%) the secondary school specialising in engineering was their first choice.
2. Half of the respondents, i.e. 39 (49.37%), think they have aptitudes for the chosen engineering profession.
3. The interest to continue studying engineering at university after the secondary school was expressed by 44 (55.70%) respondents.
4. Two-thirds of the respondents (52 in total, i.e. 65.80%) stated they are interested in engineering, for instance, machines, cars or technology in their free time.
5. More than half of the respondents (35 in total, i.e. 44.30%) figure out certain information through independent learning activities in the class.
6. More students in the research sample stated that the studies at the secondary school specialising in engineering corresponds with their ideas they had before entering secondary school.
7. Almost two-thirds of the students (52 in total, i.e. 65.82%) said that they want to be successful at school.
8. The validity of the hypothesis that "students who think they have aptitudes for the chosen profession want to be successful at school more often than students who do not think so" has been confirmed.
9. The validity of the hypothesis that "students who indicated the secondary school where they are studying as their first choice on the application form state that they will continue studying engineering at university more often than students who did not indicate this secondary school as their first choice" has not been confirmed.
10. The validity of the hypothesis that "Students who are interested in technology in their free time report that they want to continue their studies at a technical college after graduating from high school more often than students who are not interested in technology in their free time" has been confirmed.
11. The validity of the hypothesis that "Students who think that teachers of vocational subjects lead them to think about a technical problem report that the school deepens their interest in the field of study more often than students who do not think so" has been confirmed.

2 Discussion and Conclusion

The problem of students' motivation to the study of technical engineering fields at high schools was analysed using questions focused on discovering the circumstances of the choice of these fields, the more in-depth interest in the field, the compliance of the study reality with the previous idea and the further study perspective of students. In a thematically related study (Ondrejkoř, Křemenová, Malý, Krajča, 2017), the authors have focused on the comparison of answers of two groups of technical engineering fields – schools finished with vocational certificate and schools finished with school-leaving exam. The authors analysed reasons behind the choice of the field, satisfaction with the choice, the intention to apply in the field after graduation or seeking employment in another field.

However, distinct differences in the questions do not allow to directly compare acquired data except one area represented by the question concerning the comparison of compliance of study reality with the previous idea of the student, and the question of satisfaction with the choice of the field in the other research, which results are presented negatively as the students are dissatisfied with the study field. Almost 57% of respondents of our research confirm the compliance of the studies with the idea. In the other research, the most frequent reasons for the dissatisfaction are the low share of practical training (mentioned by 18% of respondents), loss of interest in the field (13%) and low quality of preparation in the field (10%). Assuming that every pupil would state one reason for dissatisfaction, the summation of 41% of respondents would almost comply with our discovery. Question about whether the field was a first choice for the students was positively answered by 67% of our respondents and 78% of Czech students participating in EUROSTUDENT VI research (Fischer, Vltavská et al., 2016).

In the next phase of the research, which will build on the presented pilot research survey, a collection of data will be carried out on a sample of students from six secondary technical engineering schools in the Moravian-Silesian Region in the Czech Republic. It will contribute to higher reliability and relevance of the discoveries and will allow formulating more general statements about the chosen aspects of students' motivation for the choice of professional training. At the same time, the school will be provided with materials reflecting the motivation level of their students, a level which crucially influences the results of their studies or more precisely their stay in the studies and possibility to commence the professional practice in the field.

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Primary Paper Section: A

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LEADERSHIP COMPETENCIES AT LARGE INDUSTRIAL COMPANIES: MODEL OF COMPETENCIES

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Abstract: The aim of this study is to recognize relevant managerial competencies which has important role in the leadership of large industrial enterprises located in South Moravia. This study aims to identify current scientific approaches to competency research, composition and classification. Model of competencies introduced in this publication is proposed based on findings from quantitative research conducted within the large industrial companies located in South Moravia and competencies' definition introduce in central database of competencies: Model is relevant for middle and top level of management where the research was applied and the model can serve as a base for building own models with consideration of business field and environment or for further research.

Keywords: leadership competencies, management, model of competencies, HRM, industrial companies

1 Introduction

According to Wang and Haggerty (2011) companies are aware that employees are those, who creates value. Each job in company's hierarchy should have clearly defined competencies, which are necessary to perform the job. Clearly defined model of competencies is currently very common and useful solution which companies could use as a support by filling positions and selecting suitable candidates (e. g. suitable person for leadership position in international environment (Mazánek et al. 2017). It allows to precisely define the professional and personal requirements for work performance and represent a great tool for selecting, evaluating and determination of the development process of knowledge and skills. Moreover, eliminates specific gaps between employee's competencies (Hroník et al., 2008). As a part of competence politics, certain indicators could be evaluated. Next up with analysis of the evaluation can be various opportunities or threats revealed and it could lead to continuous improvement of the employees (Kubeš et al., 2004). Even it sounds very same, there is a difference between competency and competence. To compare the meanings, the definition of competency can be seen as knowledge, skills, mindsets, thought patterns, and the like used whether singularly or in various combinations, result in successful performance and on the other side the competence is a function of worthy performance, which is a function of the ratio of valuable accomplishments to costly behavior (Teodorescu, 2006). Broadly speaking, competence reflects a person's cognitive approach to a task, encompassing the multiple attributes of knowledge, skills and attitudes whereas competency highlights a person's ability to perform those tasks within the defined context of professional practice (Leung et al., 2016). There were set the three research questions:

1. What is the historical background to competence approaches?
2. How could be the competences composed and classified through competency model?
3. Which competencies are relevant for leaders in the managerial position in the large industrial companies in South Moravian region?

2 Development of Competence Approaches

Managerial competencies have been studied for more than 30 years, mainly within two main streams. The first describes competences as certain features, i.e. motivation, features, skills, defining a social role or self-presentation, or as the amount of knowledge required to perform the work (Boyatzis, 1982; Sandberg, 2000). Boyatzis (1982) uses competence to define individual characteristics that affect high performance. The research of 150 case studies from North America and it is based

on article written by David C. McClelland in 1973. Analysis of the case studies has shown that this theory begun to be applied in an inductive way – based on scientific methods and in-depth analysis. Later, however the theory has gradually evolved into application in deducting way – using prerequisite competence dictionaries that solve some specific cases. Both approaches are different but, on the other hand, they have the same goal – to create a list of key competencies (6-20) that perfectly describes the job position and form the human resources department in the selection, training and career development of employees. Currently it is also a hybrid approach in use, which combines highlights of positive attributes of both approaches and applies it in practice (Bouteiller and Gilbert, 2016). Woodruffe (1993) describes competence as observable work performance, which, according to Cardy and Selvarajan (2006), may include traditional knowledge, skills and skills but also motivation. According to Bouteiller and Gilbert (2016) is recommended to select employees not only based on competency test, but also use an intelligence test. The second stream is a newer approach to competency research, which is called an interpretative approach. This approach considers competence as a condition defined by the situation in which the person is located or the work, which is expected to be performed by the person. In other words, the way in which work is conceptualized enables a worker to organize specific knowledge and skills into different performance competencies (Sandberg, 2000). This conceptualization is then what enables the worker to perceive as an average, experienced or expert in the area (Rogers et al., 2015). Since competence is a perceptual matter, it depends on the context that is observed, given the different requirements of knowledge, abilities and skills (Bassellier et al., 2003; Marcolin et al., 2000). Therefore, a person who is considered an expert within a certain context may not be considered an expert in the context of another. To be perceived as a competent person, it is necessary that the knowledge, skills and abilities, was able to express in a joint work. In the course of cooperation with others, others can see and perceive competence or lack of competence in the corresponding context. It is therefore likely that those who demonstrate competence will perform better work performance than those who do not show competence (Wang and Haggerty, 2011).

3 Models of Competencies

Leadership Competence model is often used to identify key competencies and competencies for employees, in which a link between competence and performance needs to be established. It is important to determine the appropriate number of key competences. The development of the overall personality can be achieved by focusing on 3 to 5 competencies and consequently on improving them to an excellent level. Every individual uses different abilities and their level, so it is better to focus on those that are natural to the individual. Identified competencies can be further developed for the benefit of all stakeholders. In order to monitor the process, an evaluation system should be created, which needs to focus on the overall performance and objectives set to monitor the progress of senior executives (Clemmer, 2014). Competency model can be used to detect capabilities that will meet the needs of managers. It can also be used to eliminate the differences between required and available capabilities, making them more efficient for their managers and leading to the development of effective management (Wu and Lee, 2007). Competence can help meet competitive challenges by improving skill levels and efficiency of the workforce of HR professionals. According to Bozkurt (2011), the Competence Model applies to the group of competencies required in a particular job: 7 to 9 competencies depending on the nature and complexity of the work. Other influential elements are the values of the organization and its culture. Hogen and Kaiser (2005) consider that each existing competence model identifies four broad domains of managerial competencies – see table 1.

Table 1: Domain Model of Competencies

Domain	Definition of competencies
Intrapersonal	Internalized standards of performance; able to control emotions and behaviour (courage and willingness to take a stand; career ambition and perseverance; integrity, ethics, and values; core self-esteem and emotional stability; patience; tolerance of ambiguity)
Interpersonal	Social skill role-taking and role-playing ability; talent for building and maintaining relationships (political savoir faire, peer and boss relations, self-presentation and impression management, listening and negotiating, oral and written communications, customer focus, approachability)
Business	Abilities and technical knowledge needed to plan, budget, coordinate, and monitor organizational activity (business acumen, quality decision making, intellectual horsepower, functional/technical skills, organizing ability, priority setting, developing effective business strategy)
Leadership	Influence and team-building skills (providing direction, support, and standards for accomplishment; communicating a compelling vision; caring about, developing, and challenging direct reports; hiring and staffing strategically; motivating others; building effective teams; managing diversity)

Source: Hogan and Warrenfeltz (2003)

4 Results

4.1 Description of research field

Results of quantitative research published by Mazánek a kol. (2018), which was conducted among 96 largest companies' CEOs in the South Moravian region, showed perception of single competencies in a daily work. 24 questionnaires were received back from the managers of the major companies of the Southern Moravia region and identified the most important competencies in eyes of CEOs. Research have gathered complete information about our respondents as well. Gender distribution of respondents, where the majority was represented by men, up to 92% and 8% of women in different management levels could identify the competencies which are seen as key in both middle and top management level. From perspective subordinates' number was more than half of respondents having more than 10 subordinates (58.3%), having between 5 to 10 subordinates more than a fifth of respondents (20.8%) and the second fifth of respondents having less than 5 subordinates (20.8%). From the experience point of view, it can be stated that the majority had work experience ranging from 1 to 7 years (67%), while approximately one third (32%) of the respondents had more than 7-years' experience.

4.1 Model of competencies

In addition to research results the desired competencies of middle and top management level were analyzed in depth for further processing. Next process step has been to reflect of researched competencies into set-up defined in central database of competencies (Národní soustava povolání, 2017). This reflection was done with deep qualitative comparison of definitions in Central Database of Competencies and definition of competencies within research.

Table 2: Model of competencies – middle and top management level in large industrial companies in south Moravia

Competence (Category / Domain)	Requested abilities of managers to
Leadership (Soft / Leadership)	Formulate ideas in both written and oral form. Listen to others and motivate them. Adequate self-enforcement. Give and receive feedback. Organize work of subordinates and to solve conflicts. Ability to formulate an attractive vision and to transfer key knowledge.
Autonomy (Soft / Intrapersonal)	Make decision and converting achievement of goals into steps. Plan, long-term concentrating and distribute own energy. Quick, flexible decide and find help if necessary. Carry risk for own decisions.
Load management (Soft / Intrapersonal)	Deliver very good performance even in extremely difficult conditions and keep realistic approach to stressful situations. Overcome obstacles, analyze the situation, look for alternatives and choose the most appropriate solution. To control own feelings even in very tense situations, to work with emotions of others and support them.
Environment knowledge (Professional / Business)	Gain and enhance professional knowledge of the field. Creation, maintenance and work with professional documentation. Methodological goal setting and monitoring Economic/strategic assessment and decision making. Control and evaluation of quality and results of work of subordinate workers.
Effective Communication (Soft / Interpersonal)	Form and transfer own ideas in clear way. Present at a large forum and convince others. Get real opinions from others and use constructive conflicts. Work with feedback in all directions. Communicate with other cultures.
Teamwork (Soft / Leadership)	Take the role of natural leader in the group, Have natural authority. To cooperate in international, multicultural teams.
Planning and organizing (Soft / Business)	Create visions, design strategies, and effectively plan the potential for self and others. Set/monitor goals and priorities motivates the environment to achieve them considering risks. Plan the necessary resources, their effective use and time
EN language competence (General / Interpersonal)	Understand a wide range of texts or and recognize the hidden meaning. Express him/herself fluently and spontaneously, without too long search for expressions. Use language flexibly and effectively for social, study and work purposes. Summarize information from various sources, reconstruct arguments and explanations and present them coherently.

Source: Own according to central database of competencies (Národní soustava povolání, 2017)

Every competence mentioned in table nr. 2 is also following categorization of competencies according to central database of competencies. This unification helped to identify top 8 competencies perceived as most required for managers within South Moravia in both layers of management – middle and top management (see table above). Model of competencies is covering 8 main required competencies as desired according Botkurt (2011), which are seen as most important in defined field of profession. Moreover, as described by Hoagan and Kaiser (2005) presented model identifies four domains of managerial competences – intrapersonal, interpersonal, business and leadership.

According to Abraham et al. (2001) are the most important competences for effective leadership skills communication, problem solving, team building and decision making. This approach is as well very similar to this research results across the both management level. Kirkpatrick and Locke (1991) consider the most important intelligence, initiative and business knowledge to be the most important. Irelan and Hitt (1999) mention flexibility, teamwork and strategic thinking. Propp, Glickman and Uehara (2003), mention that as well technical skills, experiences, ability to manage relationships, recognition of an informal organizational structure may be part of the leadership competencies. And according to Brownell (2008), effective listening, training, credibility, endurance, integrity, flexibility or positive attitude are all the important leadership competencies. In comparison to our research results many intersections are visible, nevertheless it appears, that there are small differences in the perceived relevance of competencies. On the other side these differences are mainly affecting priority of single competencies. This led to the limitations of the research, which consist of quite small sample (24 respondents). This could be hardly understood as enough in the quantitative research conditions. Therefore, the final decision is to focus next quantitative research on results from this study and, in parallel, to test proposed competence model with quantitative research results as well.

5 Discussion and conclusion

Large companies are currently focus on teamwork more than individuals. Competence models play a key role for companies that emphasize their employees' abilities (Mazánek and Vraniak, 2017). It is desirable for the effective implementation of work activities, that everyone has the right skills, which corresponds to the working environment and the workplace. Competencies constitute the intellectual property of companies and are an important factor in strategic decision making and selection of suitable candidates for managerial position. They reflect the basic skills of the experiences and behavioral patterns that are crucial to the performance of the managerial function. The article defines the basic terms and puts them in context.

The conclusion of the research was accompanied by an examination of the perceived importance of managerial skills. The findings have been made available to HR specialists in the surveyed companies and served as a basis for creation of competency model. According to Kubeš et al. (2004) and Hroník et al. (2008) possible fields where a competence model can be used to improve processes in an organization are offered especially by selection, development and remuneration of leaders. In next future research results validation through larger sample of respondents is foreseen. Larger sample will allow to apply quantitative methodology and explain the measure of statistical significance of evaluated competencies.

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THE CONCEPT OF THE EQUILIBRIUM PRICE AND THE OPEN MARKET VALUE: A COMPARISON

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Abstract: Every market has its specifics. According to these specifics, the prices for the property traded on a particular market are set. Based on the specifics of the real estate market, the aim of this paper is to determine whether the equilibrium price of a property corresponds with its open market value usually set in the valuation practice and, subsequently, to discuss the potential differences. The theoretical definitions of the individual types of prices (e.g. the equilibrium price, open market value, bid price) provided a foundation for the conclusion that each of the explored types of price is very specific and is shaped by the influence of many factors. As a practical example, the theoretical basis of pricing strategies is applied on the real estate market. The real estate market is a good example of the fact that, from the point of view of pricing strategies, the nominal values of the prices do not equal. The performed theoretical analysis, literature review and practical research are used as factual material for the stated conclusions.

Keywords: open market value, equilibrium price, Efficient Market Hypothesis, real estate market, development project

1 Introduction

Every market is defined by its specific characteristics and factors influencing it both externally and internally. On the real estate market, the individual factors creating the economic environment of the whole market can be seen in different sections of the set of economic functions.

One of the key indicators that develops in a very specific way on every market is the pricing strategy for a particular property. From this point of view, the economic theories distinguish several types of prices (open market value, equilibrium price, bid price etc.). All of these types of prices result from different economic processes.

From the theoretical viewpoint, it is essential to perceive and understand the differences between all types of prices when using the terms for example in reference literature, namely on the side of both the author and the reader. Therefore, the orientation in all types of prices is necessary for both written and spoken information transfer about economic issues for both sides.

In this paper, a theoretical analysis of chosen pricing strategies will be conducted with an application of these theories on the real estate market. Based on the specifics of the real estate market, the aim of this paper is to determine whether the equilibrium price of real estate corresponds with its open market value usually established in the valuation practice. Subsequently, any potential differences will be discussed.

From the point of view of pricing strategies, the real estate market is influenced by many factors (supply, demand etc.). The supply and demand in particular can be seen as the main agents creating the equilibrium price. The open market value is generally defined by the International Valuation Standards (IVS) and, specifically for the conditions in the Czech Republic, moreover, in the Act No. 151/1997 Sb.

2 Literature Review

For the purpose of this paper, it is necessary to start with a definition of market efficiency. The Efficient Market Hypothesis belongs to the basic economic terms studied by many authors in the last 50 years. The Efficient Market Hypothesis was

developed in the 1970s by Eugene Fama. The theory became a milestone in the development of theoretical concepts and models used by many economists to try to explain the price development of financial assets (Armeanu and Cioaca, 2014).

The Efficient Market Hypothesis applied on the stock market presupposes that the actual share prices fully reflect all available information about the enterprise value and that there is no way to generate excessively high profit due to this information (Horák and Krulický, 2019).

Kendall (1953) tried to find any price cyclicality in the prices of shares and other commodities. However, he did not discover any pattern describing the cyclicality in the price development based on publicly available information. He drew a conclusion that the price development is random and the future price is influenced by the last known price at the most. He called this behaviour of the process of price development in time a "random walk".

The market efficiency has three basic forms. Liu (2009) divides the markets according to their efficiency level into weak, semi-strong and strong ones. The weak market efficiency form includes only publicly available information into the reaction of asset price development. The semi-strong form includes besides the publicly available information the historical data as well. The strong market efficiency form reflects all public, historical and private information in the assets pricing strategy on a market.

Veselá (2019) defines four basic characteristics of an efficient market. The first characteristic feature of an efficient market is an immediate and abrupt reaction of stock value on stock markets on a new unexpected piece of information. The second characteristic is the independence of the changes of stock values on stock markets on the preceding time period. As for the third characteristic feature, no investor can repeatedly and in a long term generate an above-average profit. Last but not least, business or investment strategies focusing on destabilizing the market do not function.

Fama (1970) himself characterizes the efficient market as a market where the participants have unlimited possibilities of accessing or leaving it. Moreover, all participants have a constant access to all information that can possibly influence the assets price on the market. Furthermore, all partakers accept this available information and reflect it in the actual value of all assets of their product portfolio.

The predictability of investment return is an inverse indicator of market efficiency. In the environment of an efficient market, all active rationally thinking participants get information about its development at the exact same time and can, therefore, not use this piece of information to their own benefit (Chordia, Roll and Subrahmanyam, 2008). There is a very negative phenomenon corrupting the efficient market, namely the trade with negative information among the market participants. This information has an enormous impact on the behaviour of investors and stock holders. This is followed by a fast reaction of the stock market in the form of further development of the stock price (Edmans, 2009). In case that any of the participants associated with a functioning efficient market do not have the information necessary for their rational behaviour, their, from the point of view of other participants irrational, decision can contribute to or even cause a destabilization of an otherwise functioning efficient market (Kauffman, Spaulding and Wood, 2009).

Kim and Shamsuddin (2008) tested whether Asian market works according to the Efficient Market Hypothesis. They came to a conclusion that some Asian markets function as efficient markets only in the weak form. Other markets underwent at the time of the observation a significant evolution and started fulfilling the characteristics of an efficient market. The price efficiency of a

market depends on the level of the development of the stock market and on the degree and method of its regulation.

Borges (2010) tested the Efficient Market Hypothesis on stock market indexes in European countries. In particular, the stock markets of Great Britain, France, Germany, Spain, Greece and Portugal in the time period 1993-2007 were involved. According to the data available, Borges reached the conclusion that the Efficient Market Hypothesis manifests itself in its strong form in Germany. On the other hand, the behaviour of Portuguese and Greek stock markets denies the Efficient Market Hypothesis. However, after 2003, even these stock markets started to show characteristics of this hypothesis.

A market is considered to be efficient when all available data about individual subjects are already processed by the Invisible Hand and reflected in the price of the assets (stocks, their indexes, individual currencies, bonds and commodities). The following characteristics belong among the preconditions of an efficient market:

- 1) immediate reaction of the asset's prices on a new unexpected information,
- 2) transaction costs are low,
- 3) market is highly liquid,
- 4) a high-quality infrastructure and legal regulation of the market.

Rationally thinking investors deal with valuing the stocks and they are, therefore, able to determine the value of a stock in a concrete moment if they have all information influencing the stock value at their disposal (Shiller, 2010). Ardalan (2018) claims that the cognitive processes of considering the price development on the market and the associated behaviour of a rationally thinking investor has a destabilization of the market as a consequence.

There is, however, a question whether the Effective Market Hypothesis is still valid even today. The hypothesis is nowadays supported but also denounced for its non-topicality and invalidity. It is, however, necessary to remark that the popular financial models from the 1970s and 1980s were based on the precondition of a functioning efficient market, mainly as far as the obligation and option models are concerned (Majumder, 2013).

In the last decades, studies with the purpose of denying the Efficient Market Hypothesis emerged. Nevertheless, it is very difficult to test the Efficient Market Hypothesis for its confirmation or disproval due to the changes of the market and economic conditions. For such cases, according to Titan (2014) a new model should be developed that would take all market risks into consideration. Titan points out that further studies about market behaviour simulation should focus more on their verity.

There is no united opinion on the efficiency or inefficiency of the current stock markets. Urquhart and McGroarty (2016) explored the Adaptive Market Hypothesis on stock markets. As there is always some chance of return on the original value of the purchased share on stock markets, these markets show, according to their assertion, the features of the Adaptive Market Hypothesis. They reached their conclusion based on the results of statistical tests (F-Tests) and a non-parametric BDS Test on the basis of information about the monthly development of the stock prices. This idea is supported by Dhankar and Shankar (2016) as well as it is, according to their opinion, very improbable to keep an accurate and lasting information efficiency for the price and price indexes reactions on stock markets which form the foundation for the Efficient Market Hypothesis.

A very interesting hypothesis tested in the process of research in the field of efficient market is the persisting shortage of liquidity. According to Dragota, Tilica and Oprea (2013), stock markets cannot be considered to be efficient because, due to the

existence of non-business days on stock markets, their overall liquidity increases and the presupposition representing one of the key characteristics of an efficient market is, therefore, not fulfilled. The liquidity of an efficient market is described by (Young and Auret, 2018). The liquidity of the efficient market was measured based on the market turnover. The non-liquidity on efficient markets weakens the predictability of the investment return. This idea was supported also by Ibikunle et al. (2016) testing the mutual relation of efficiency and liquidity on the global carbon market.

According to Chordio, Roll and Subrahmanyam (2008) the liquidity stimulates the arbitrage activity, which, once more, increases the market efficiency.

Su, Cheung and Roca (2012) examined the efficiency of real estate markets based on data from 14 countries (Australia, Canada, France, Germany, Hong Kong, Italy, Japan, the Netherlands, Norway, Singapore, Sweden, Switzerland, Great Britain and the USA) by means of generalized spectral tests according to the methodology created by (Escanciano and Velasco, 2006). The efficiency of a real estate market was detected only in six cases, particularly in markets known for their high liquidity, globalisation and the best standards of regulation that make the markets work transparently.

Almudhaf and Hansz (2018) explored the behaviour of the real estate market into much more detail. By means of statistical tests conducted on information about the real estate price development, the efficiency of individual properties according to their way of use on the real estate market was further examined. The authors observe a different level of investment return risks from the individual properties according to their way of use.

On every market, there is a competition on the side of both the supply and the demand called as a competition across the market. The competition on the side of the supply takes the goal of the seller into account, namely to sell as much goods as possible for the highest prices possible and to, consequently, maximize their profit. From the point of view of its form, the competition of the supply can be divided into two groups: a price competition and a non-price competition (Stehel, Horák and Vochozka, 2019). Gerardi and Shapiro (2009) claim that the competition impacts negatively the price dispersion.

Chie and Chen (2013) propose, according to the example of Herbert Simon, their own model based on quality called modular economy. This model is capable of taking the non-price type of the seller competition into account. The non-price form of competition is perceived as the ability of a product to satisfy the needs of the buyer more than a similar product from a different seller.

The amount of demand can be, to some extent, regulated by the sellers. Higher prices for the goods and services result in a decrease in demand. When the optimal price level is set, there is no excess in production either and the commodity liquidity is adequate to the amount of produced goods (Shin and Tunca, 2010).

According to Anderson and Bao (2010) the price is the means of communication between the seller and the buyer.

A particular form of competition on the side of the demand is described also by Xiao and Qi (2008). Based on their findings, the common practice among the suppliers is to charge more for a unit of ordered goods in order to force the merchant to increase the amount of orders resulting in a decrease of the price for one unit of the delivered goods (the so-called quantity discount).

In the efficient market environment, there is only the perfect competition. Shneyerov and Wong (2010) dealt with measuring the rate of convergence to the perfect competition on the model of a seller and a buyer creating together the final price for a property or service based on the non-public information.

Azevedo and Gottlieb (2017) propose a model of a perfect competition based on pricing strategies under the conditions of zero profit and a free access to and exit from the market. Even in the case when individual sellers and buyers have different non-public information, there is a perfect competition between them. The term perfect competition is a methodologically unacceptable state of a market. Its significance lies in empirically oriented economy (McDermott, 2015).

The basic market mechanism is formed by the conflict between the demand and the supply on the market. This market mechanism has been described into great detail by many economists concerned with the field of microeconomics. The relation of development of supply and demand is described in the following way: with an increasing demand for a particular commodity, its supply decreases and, simultaneously, its price increases and the other way around. One of the authors describing this mechanism is (Jurečka et al., 2018). In the process of this mechanism, the equilibrium price is created. The equilibrium price is a value given in any currency in the moment when the curve of supply intersects the curve of demand. This represents the state when a particular commodity is supplied in the same amount in which it is actually demanded by consumers. Supply and demand are, therefore, in equilibrium at that moment.

The equilibrium price directly takes the demand and supply into consideration and bases on the concept of an efficient market. According to Anderson and Raimondo (2018) the equilibrium price reflects all available information that can be accessed on the market as a material for setting the pricing strategy. In some fields, a major role in the process of establishing the equilibrium price can be played by the availability of technologies necessary for producing a particular commodity or providing a concrete service. This is valid on condition that some technologies are more efficient than others (usually than older technologies) (Bjorndal and Jorsten, 2008).

Furthermore, the definition of an open market value according to Act No. 151/1997 Sb. and also according to the IVS will be provided.

Property and services are valued by their open market value unless the valuation law establishes a different way of valuating (Mareček, Horák and Hejda, 2019). For the purpose of the valuation law, the open market value is understood as the price that would be reached in the sale of the same or similar property or when providing the same or similar service in the usual trade in inland on the day of the valuation. All circumstances influencing the price are taken into account apart from extraordinary conditions on the market, personal relations of the seller or the buyer and the influence of *pretium affectionis*. The open market value reflects the value of a thing and is determined by a comparison. IVS (2017) do not clearly define the term "open market value". They provide, however, a few basic terms that can give away an equivalent of this term. This equivalent is represented by the market price. The market price is an estimated price for which a property should be traded between a voluntary buyer and a voluntary seller in an independent transaction after appropriate marketing to the date of the valuation provided that both parties act in an informed and reasonable way without pressure.

The estimated price is, in this case, a value expressed using financial means that was reached in an independent payment transaction for the same assets. Internally motivated persons, the one acting for the purpose of purchase, the other for the purpose of sale, are called voluntary buyer and voluntary seller. Under the term independent transaction, it is understood that there is no other factor between the seller and the buyer that would influence the whole development of the transaction or the amount of financial settlement. In the text of the IVS, the fact that both participants of the transaction are familiar with the state of the object and, at the same time, try to reach the highest but still acceptable price in their own interest is referred to as a full awareness and rational behaviour of both parties. Relevant

information about the value of the object of purchase to the day of the transaction are, therefore, crucial for both parties (Mařík, 2004). The pricing strategies of both price types mentioned can be observed on the real estate market. This market has, like any other market, its particular specifics. The real estate market is a very competitive environment where different subjects employ various investment strategies. Investors look primarily for strategies minimizing the risks (Renigier-Bilozor et al., 2014).

According to Niskanen and Falkenbach (2014) the real estate companies can be divided into two main categories. The first group includes companies that buy property in order to gain profit through their further sale, which is a very common practice of European real estate companies. The second, not that common group of real estate companies buy property for the purpose of an investment. They also claim that property bought for investment purposes is more liquid than property that is meant for a further sale. The reason might consist in the ownership structure of a property. Based on a high liquidity, it can be stated that property acts as a preferred investment tool for the companies of the second group.

Levitt and Syverson (2008) draw attention to the fact that the contemporary real estate market is very corrupt. It is primarily the real estate agents who are to blame as they are hired by people wanting to sell their property but not knowing their way around the conditions of the real estate market. The above-mentioned corruption of the real estate market is performed in such a way that these real estate agents convince the seller to a quick sale for a lower financial settlement that would be demanded from an individual owner familiar with the conditions of the real estate market.

3 Materials and Methods

In the first step, the equilibrium price and the open market value will be defined along with a clarification of the methodology of their origin. Subsequently, the factors will be identified that contribute to the pricing strategy. Eventually, the theoretical fundament of both types of prices will be applied on the real estate market and the conditions influencing the pricing strategy and, furthermore, presented and clarified using a graphic representation of aggregate supply and demand. These curves will be, moreover, connected with the specifics of the real estate market. A research of the real estate market liquidity in the Czech Republic will be conducted as well.

The theory of the equilibrium price works on the assumption that there is a well-functioning efficient market. For this particular reason, it will be explored whether the real estate market can be considered to be efficient and, consequently, whether the equilibrium price theory works there.

Furthermore, the process of creating the open market value will be described along with the factors influencing this price the most.

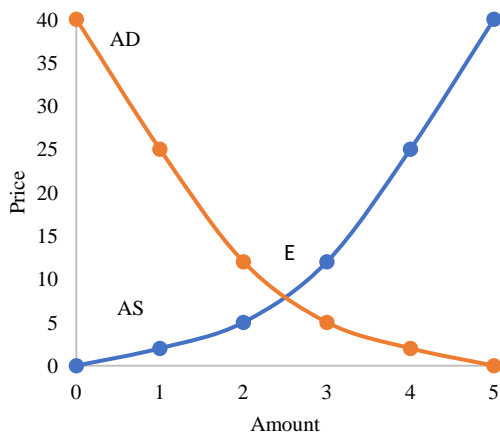
While interpreting the theoretical assumptions in the form of a graphic illustration, the results will be presented based on both the hypothetical and ascertained input data. The values represented in the graphic representations of the individual explored issues will be chosen in such a way that they can provide the best informational value when clarifying the issue.

The research into liquidity of the real estate market in the Czech Republic will be conducted using the analysis of the number of offers of properties on Czech real estate advertising websites. The number of offers will be analysed according to individual categories. The real estate will be categorized in several groups: housing units, housing infrastructure development projects, estates, commercial property and other (garages etc.). The number of offers in each category will be observed to the first day of the respective month from February to June 2020.

4 Results and Discussion

The equilibrium price can be established only in the environment of an efficient market. The efficient market is characterised mainly by the fact that there is no excess or shortage of any goods. The market is, therefore, in a perfect equilibrium. This condition can be illustrated on the relation of the aggregate supply (AS) and aggregate demand (AD) (see Figure 1).

Figure 1: The efficient market model demonstrated on the AS and AD curve



Source: Authors.

According to the Figure 1, it is evident that the efficient market works in an equilibrium state (E) created by the intersection of the curves AS and AD.

When creating the equilibrium price, only the demanded and supplied amount of property for a price acceptable for all parties of the business transaction is taken into account. The equilibrium price, therefore, represents a current price in a particular point in time and place without any external influence and circumstances of the particular market or other markets, political influence etc. Moreover, it means that all prerequisites of a functioning efficient market are fulfilled. The price reaction is immediate and abrupt as the intersection of the AS and AD curves occurs at a particular point in time respecting the "random walk" principle. It is, therefore, not possible for an individual to reach above-average profit from property sales, let alone for a longer period of time. The liquidity of an efficient market is optimal, there is no excess or shortage. This state can be reached only in case of a strict legal regulation.

From the conducted research, it is evident that the real estate market in the Czech Republic is specific and does not fulfil all preconditions of an efficient market, mainly as far as the high liquidity is concerned. This fact follows from the research into liquidity conducted using real estate advertising websites. The results are shown in Table 1.

Tab. 1: Number of offers on the Czech real estate market

Real Estate Category	Number of Offers				
	2/2020	3/2020	4/2020	5/2020	6/2020
Housing units	15,206	14,489	14,360	14,628	14,537
Housing Infrastructure Development Projects	441	425	438	451	469
Estates	13,421	13,518	13,611	13,768	13,696
Commercial Property	4,990	4,996	4,990	4,984	4,998
Others (garages etc.)	521	499	513	546	537
Total	34,579	33,927	33,912	34,377	34,237

Source: Seznam.cz (2020), own interpretation.

Table 1 shows that more than 34,000 pieces of real estate were published in the time period from February to June 2020 on real estate advertising websites. This only proves the fact that the real estate market cannot be considered to be an effective market.

In some regions of the Czech Republic, one can spot a higher supply than demand and also the other way around. In big cities experiencing an influx of population due to the trends of centralization and urbanization, the demand for property increases and the supply is not capable of satisfying it. On the other hand, there is a low demand in regions with a high unemployment rate and few job opportunities. As a consequence, the supply exceeds the demand there. One of the price-forming factors is also a different accessibility of services. This causes a destabilization of the equilibrium price and, consequently, formation of the open market value. Besides the accessibility of services, another important criterion is also the comfort quality for the inhabitants as far as the points of interest are concerned. Rousek (2010) describes the possibilities of up-keeping local roads for local administration and the method of the right choice of a company providing these services. Bigger differences are observable in case that the price development for individual real estate categories (housing units, family houses, industrial buildings etc.) is taken into account.

Hašková, Volf and Machová (2019) focused on the convergence trends in Czech regions. They came to the conclusion that both the internal and external factors influencing the regional GDP can also have an impact on the decrease of unemployment in the respective regions. This way, the demand for real estate as well as the disposable income can be influenced.

For these above-mentioned reasons, it is usual that, in the process of valuation, the open market value of a property is established. The open market value takes, next to the demand and supply on the real estate market, also further price-forming factors into account such as how much time passes from the first publication of the offer before a purchase contract is concluded. This viewpoint in particular is very crucial for the formation of the open market value. In the case of the real estate market, it is necessary to allow for the transaction time, i.e. the time that passes from the first contact of the seller with the potential buyer who decides to buy the particular property. This time period, as far as the real estate market is concerned, includes the real estate tour, creation of a contract, a financial settlement and a data change in the land registry. The open market value is set based on the assumption of usual prices of comparable property along with a usual time necessary from the first publication of the offer to the moment of the conclusion of a purchase contract including the final arranged payment. During this time, there is usually a development of the real estate price mainly in property where the conclusion of the purchase contract is expected to take more time up to the point where the bid price is considered to be the open market value. For this reason, the valuation practice uses correction coefficients that take the influence of the time delay into consideration. In exceptional cases, however, the offered property can be sold for a price different from the open market value. In such case, the influence of extraordinary circumstances on the market, personal relationships of the seller or the buyer or the pretium affectionis reflects itself in the price. It follows that not every deal on the real estate market is closed for the open market value.

The time viewpoint reflects also the liquidity of the real estate market. When establishing the open market value of a property, the assessment is usually based on the prices of similar real estate matching as far as their size, location and technical state of the valued property is concerned. Subtle differences in the individual parameters are taken into account by means of the correction coefficients. As there is no publicly accessible database of realized real estate sales in the Czech Republic that could provide the data about the final selling prices serving as a reference material for establishing the open market value, the valuers are often forced to use the bid price as a basis for setting the open market value. The selling prices of all real estate can be, however, accessed in the chargeable section of the Czech

land registry, where purchase contracts concluded for particular property are kept record of. However, regarding the amount of data needed for the valuer to establish the open market value of a valued property, collecting the necessary information would be a very expensive process. The bid prices are subsequently corrected using the so-called coefficient of reduction to the source price. This coefficient is used in the case that, in the process of establishing the open market value, it is proceeded from the bid price of similar property by means of the comparative method. Generally, the bid price is considered to be higher than the actual purchase price. If actual purchase prices of similar property are used to establish the open market value, the coefficient of reduction to the source price is (Bradáč et al., 2016). Another factor influencing the forming of the open market value of real estate is liquidity of housing infrastructure development projects. Lower liquidity in these projects can represent a source of risk of losing the financial means for the investor. According to Ooi, Le and Lee (2014) the main factor determining the value of property built in housing structure development projects mainly the quality of their technical execution. Furthermore, it influences positively the value of the property for the contractor but also for a potential future investor. A better technical execution can, therefore significantly increase the liquidity of this type of real estate.

In case of a low liquidity of the real estate market, the sellers are progressively forced to lower their bid prices of the offered property, which results in a decrease in the final payment. Momeni and Martinsuo (2019) state that in the case of development projects, a cooperation of a wider team dealing with marketing from the beginning of the development project is necessary for a successful sale of all units built in pursuance of the project and, consequently, for minimizing the risk of losing value of investments for the investor.

In the process of building development projects, a particular construction enterprise ensuring the realization of the whole project from the technical point of view is chosen. Vochozka and Machová (2017) were, therefore, concerned with the identification of value generators of construction enterprises in connection with the construction of new real estate.

According to the Czech National Bank in the time period from 2006 to 2010, 90.4% of all housing units built in the process of constructing development projects were sold before their completion. However, due to the economic crisis in 2008, this trend started to drop. This development is illustrated in Table 2.

Tab. 2: The share of housing units sold in development projects before their completion (time period 2006-2010)

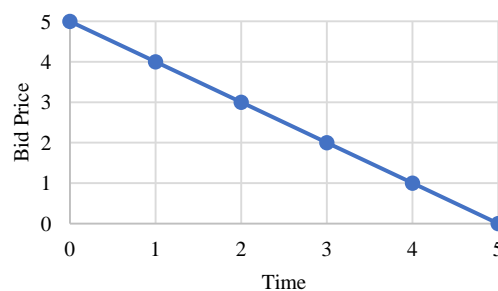
Year	2006	2007	2008	2009	2010
Share of Sold Housing Units [%]	90.4	94.8	84.3	66.9	60.1

Source: Authors.

Even though the rapidity of development project sales progressively decreases, they offer very interesting job positions for companies active in the sector of construction from the point of view of their realization. According to Vrbka, Šuleř and Horák (2019) it is the construction companies which contribute to the economic growth in the Czech Republic the most. In compliance with their conclusion, there are only a few construction companies in the Czech Republic that would be capable of influencing the economic situation of the whole EU by their size.

According to Krulický and Horák (2019) real estate can serve as an investment asset for a property developer. In the case of sale, however, the bid price progresses depending on the length of the advertisement. The development of the bid price in connection to the length of the advertisement is illustrated in Figure 2.

Figure 2: Progression of the bid price depending on the advertising time



Source: Authors.

Figure 2 show the usual scenario of bid price decrease for an offered property in case of a longer period of time before finding an eager buyer. If the seller cannot find a suitable buyer in the usual time frame, they are forced to decrease the bid price until a purchase contract is concluded and the payment on the side of the buyer in the arranged amount is made. Due to the circumstances of the real estate market development, the seller can lose a considerable amount of financial means if the initial bid price is set too high. If the real estate market develops in a negative way for the seller during the advertising time, the progressive decreasing of the bid price can result in offering the respective property for a bid price that is lower than the open market value at the time of the first publication of the advertisement.

The comparison of these results supported by the conducted research and a discussion of the issue with other authors leads to the conclusion that the equilibrium price and the open market value usually do not correspond in the real estate market environment.

5 Conclusion

The aim of the paper was to determine whether the equilibrium price and the open market value correspond in the conditions of a real estate market. The equilibrium price can be reached only in case of a functioning efficient market. The parameters and factors of the real estate market influencing the prices of property, however, do not comply with the specifics of an efficient market. For this particular reason, in the environment of the real estate market, the open market value is established in the valuation practice. According to the results, the real estate market does not meet mainly the requirement for a high liquidity and an equilibrium of supply and demand.

Based on the theoretical analysis of the equilibrium price and the open market value, it is not possible to state a correspondence in the values of both above mentioned types of prices. When exploring the reference materials for topics corresponding with the factors influencing the formation of the open market value on the real estate market, a conclusion was reached that the open market value can be influenced by a set of external factors. The main factor having an impact on the open market value is the time frame. The aim of the paper was, therefore, fulfilled.

Along with the findings, it can be stated that authors of future reference materials in the field of economy should further analyse and explore the liquidity of the real estate market in a broader context. This theoretical foundation also provides space for further and broader research in the field of the individual types of prices and, primarily, in the strategies of their formation.

Literature

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AN ATTEMPT TO IDENTIFY PROBLEMS IN THE BEHAVIOUR OF TEENAGERS AND ADOLESCENTS IN SLOVAKIA IN RELATION TO THEIR CREATIVITY AND SUCCESS IN THE SCHOOL

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Abstract: The research focuses on identification of problems in the behaviour of contemporary teenagers and adolescents in relation to their creativity and school results. The sample of 232 respondents consisted of teenagers (8th grade pupils) and adolescents (3rd grade pupils) of primary and secondary schools from Prešov. We used the TTCT – Torrance Tests of Creative Thinking, in which the respondents replenished and completed thirty circles by using colour pencils. The tests were evaluated and respondents were sorted according to types of school and factors for creativity – fluency (number of filled circles), flexibility (number of themes; different solutions in circles), and originality (uniqueness of the subject in circles). After completing the TTCT test of creativity, respondents identified by brainwriting method problems and situations that are causing problem behaviour of young people.

Keywords: Creativity, success in the school, problems in the behaviour, teenagers, adolescents, Slovakia

1 Introduction

The study focuses on identification of problems in the behaviour of current teenagers and adolescents in relation to their creativity and school results. There are growing findings in schools for violation of school rules, code of conduct violation in school and classroom. We sought answers to some questions, related to creativity, school results and two distinctive periods, namely puberty and adolescence. Do primary and secondary school pupils realize the impact of their negative behaviour? Are they able to identify problems and are they able to propose adequate solutions at this age? We have drawn on thoughts of leading experts within creativity such as Guilford, 1950; Torrance, 1970, 1975; Hlavsa, 1978; Ďurič, 1980; Dargová 2001; Zelina a Zelinová, 1990, 1997, 2007, 2018; Lokšová a Lokša, 2003; Spilková, 2004; Németh & Pukánszky, 2004; Said, 2006; Tóthová, 2006; Königová, 2007; Vašutová, 2007; Szobiová, 2004, 2009, 2016; Kasáčová, 2011; Adair, 2011; Krajčovičová, 2012; Horváthová & Szőköl, 2013; Huda, Wan a Tareq, 2013; Slavík, Chrz, Štech a kol., 2014; Mrázek, 2014; Bain, 2016; Žák, 2017, and psychology experts Emmerová, I, 2014; Vágnerová, M. 2001, 2004, 2010, 2012, 2014; Končeková, 2005, 2014; Gajdošová, 2006; Ondrejko, 2001 and others.

Society, with its increasing changes is incessantly demanding on behaviour of an individual. The individual tries to adapt to these changes, to process the amount of information and knowledge necessary for their existence in varying ways and to integrate into society (Hangoni, Cehelská, 2014). Young generation is under constant pressure of a family, school, social environment and the mass media. Its performance is subordinate to standard measurements and its behaviour should meet certain requirements and norms. Upbringing and education within family and school environments are sometimes carried out in an atmosphere of strained relations, without trust and often without interest from parents and teachers. In schools, we increasingly encounter pupils who have problems at school and often they need to minimize or overcome these problems, especially with help of teachers, schools, parents and experts.

2 Theoretical definitions

Behavioural disorders caused by inappropriate educational influences or insufficient or improper upbringing, are manifested mainly by problems in the adaptation of pupils. It may be caused by inappropriate, underdeveloped, absent habits and skills; deficiencies in upbringing and sociocultural environment, which may negatively affect the pupil's school performance. These are educational difficulties and issues that affect the pupil's school

performance. Problems arise when education either lacks appropriate incentives, patterns and methods shaping desirable ways of behaviour and skill development, or is the result of improper patterns or education methods. Thus, the child (pupil) embraces erroneous habits or fails to develop proper habits, attitudes and behaviours and does not reach an average level in some areas of personality development.

According to Vágnerová (2014), a distinction is usually drawn between three basic disorders that affect problem behaviour of children and adolescents. They can be observed when:

a) children underachieve and do not perform desired results at school

- in this case, the question therefore is whether the child is even capable of desired performance at all. Children with specific behavioural and learning disabilities are at a disadvantage. The teacher considers their abilities normal, however their motivation or volition is problematic. Often happens that a child is not able to influence, for example, attention by their volition.

b) children are primarily affected by behavioural problems

- they are aggressive towards other children and they are disrupting lessons by making a scenes. Behavioural peculiarities can be influenced by number of physical or mental causes.

c) children have emotional problems

- they show excessive anxiety, hypersensitiveness and also draw attention by their differences from other children. Formally, problem behaviour in childhood and adolescence can be divided into:
 - non-aggressive violations of social standards, including defiance, falsehood, flight, roaming, etc.;
 - aggressive behavioural disorders, including vandalism, bullying, failing grades, etc.

There are no exact boundaries therefore it may overlap.

Teachers in their practice very frequently encounter problem behaviour of children and youth at any level of education system. Behavioural problems or disorders, such as Končeková, 2014, Ondrejko, 2009, Pokorná, 2010, Vágnerová, 2010, 2012, 2014 and the others call them, may be of genetic or acquired origin. Thus, when specifying, the pupil's personality (overall picture, temperament, vulnerability, plasticity of the nervous system, received support, ability to adapt, the amount of anxiety, stress tolerance, etc.) must be taken into account. All manifestations of the pupil's behaviour should be appraised in relation to their development.

The problem behaviour of pupils at school has a disruptive effect on the teacher's learning process and it can also disturb other pupils. Problems with pupil's behaviour are often considered by beginning teachers as the most difficult aspect of education. Pupils, who manifest undesirable behaviour, always require special attention, which causes tension on teachers and decelerate the pace of their teaching. We have to acknowledge that teachers are not machines through which pupils are provided with education, but they are part of the active environment of the pupil, who expects them love, status and recognition (Sharma at all, 2013). Positive emotionality and positive emotions help to maintain good relations, foster creativity in thinking and interest in new activities (Diener, Baswas-Diener, 2008). According to Wolfgang and Glickman (1980), a teacher has a variety of models, techniques, methods and structures available to eliminate problem behaviour in classroom. To bring about the change in behaviour, the subject (pupil himself) needs to be involved into the process, because the change should be achieved with him. And this will happen only if the subject is willing to change. Therefore, the change from within is important. If we are to change behaviour from within, it means

changing the school itself as an educational institution and that is development of the pupil's creative personality, as well as changing the family and its influence on the individual. It is important to recognize signs of problem behaviour during upbringing and education in the school and family environment. In addition, to ensure their professional assessment and resolution as soon as possible, since the causation of problem behaviour may be different.

A problem pupil can be described as a pupil who over a long period and intentionally evokes conflicts. During pedagogical practice we encounter different types of pupils, who we consider to be problematic: distracting pupils, timid pupils and pupils without motivation (Kyriacou, 2005). Auger and Boucharlat (2005) categorize the problem pupil as the one, who refuses to cooperate and disrupts class. Janský (2014) under the designation 'problem pupil' means - failing, inattentive, hyperactive and impulsive pupil; pupil who steals, deceives and defies; pupil who shows hostile behaviour; aggressive pupil with violent behaviour; dejected pupil who suffers from depression, anxiety, neurotic behaviour, untidiness, filth, truancy, bullying and socio-pathological phenomena. To understand human behaviour it is necessary to understand forming mechanisms, states Drapela (2011). Some of them are intrapersonal and are related to our internal processes, and along with interpersonal determines our relationships with the people around us. These mechanisms are generally referred to as personality dynamics.

3 Research

The sample of 232 respondents, consisted of teenagers (8th grade pupils) and adolescents (3rd grade pupils) of secondary schools, hereof 58 pupils of the 8th grade from primary school in Prešov; 56 pupils of the 3rd grade from grammar school in Prešov; 58 pupils of the 3rd grade from the Hotel Academy in Prešov and 61 pupils of the 3rd grade of vocational school (former secondary apprentice school) in Prešov further explored the behavioural problems of teenagers and adolescents depending on their school results, age, type of school and creativity. At the first meeting we used *TTCT - Torrance Tests of Creative Thinking* (1975), in which the respondents replenished and completed thirty circles using colour pencils. The tests were evaluated and respondents were sorted according to types of school and factors for creativity - fluency (number of filled circles), flexibility (number of themes; different solutions in circles), and originality (uniqueness of the subject in circles) into the table.

At the subsequent meeting, respondents identified behavioural problems, they delineated what is bothering them about behaviour of their peers, classmates, teachers, adults at school, at home, outside the school, and what they consider to be the most serious behavioural problem of young people. In this phase of the research, we used creative method brainwriting (Zelina, 2011). Each respondent wrote and identified at the sheet of paper as many behavioural problems as possible. Thereafter, respondents assigned numbers from 1-10 to individual problem, according to the seriousness of the problem. Number one was assigned to the most serious problem and number ten to less serious problem. The sheets were collected after given time period and order of the most frequently mentioned problems was drawn up according to individual grades and types of school, and also according to the seriousness of behavioural problems, as all respondents stated. Verification of normality and frequency distribution of individual factors for creativity were ranked according to individual types of school. Fluency, flexibility and originality were progressively appraised. For the variance analysis of four schools, the Shapiro-Wilk test and Kruskal-Wallis one-way analysis of variance were used. Significant differences were found between groups of respondents of individual schools by analysis of variance. These are shown in Table 1 with its names: ha - Hotel Academy, gy - grammar school, sou - secondary apprentice school, zš - primary school, x - significant difference between groups.

Table 1: Fluency and its layout

Group	Number	Average order	ha	gy	sou	zš
Hotel Academy	58	79,8621			x	x
Grammar school	57	101,8596				x
Apprentice school	61	127,3770	x			
Primary school	56	157,5000	x	x		

Fluency confirmed a statistically significant difference (x) between all groups of respondents. Primary school respondents, who were better than those from grammar school, former apprentice school and those from the Hotel Academy, achieved the highest fluency score. Respondents of former apprentice school are located higher than Hotel Academy respondents, which mean that they are better in fluency even in comparison to grammar school respondents. All groups of respondents with higher fluency scores completed the largest number of circles in the TTCT test of creativity. Corresponding statistical methods were used on basis of a graphical demonstration of the data distribution.

Differences found between groups of respondents from the Hotel Academy, grammar school respondents and primary school respondents are related not only to the number of completed circles of TTCT - creativity test, but also point out that puberty is associated with authors such as Smith, Carlsson 1990, Szobiová, 1999, 2016, Končeková, 2014 etc.; period of confusion, low self-esteem, a decline of creativity factors that in adolescence appear in a more complicated and sophisticated form as it connected with development of abstract thinking and the complexity of emotional problems.

Statistically, significant differences (x) were confirmed with the flexibility factor, between groups of respondents of all school types, with the exception of two groups of grammar school (gy) and former apprentice school (sou). The Hotel Academy (ha) respondents achieved the lowest flexibility score, with the least variations in the TTCT test and it was worse than the group of grammar school respondents, group of apprentice school respondents and the worst in comparison with group of primary school respondents. The primary school respondents achieved the highest score, which means they were the best in terms of flexibility and also used the most diverse motives in the creativity test. The data are shown in Table 2.

Table 2: Flexibility and its layout

Group	Number	Average order	ha	gy	sou	zš
Hotel Academy	58	75,6638		x	x	x
Grammar school	57	108,7544	x			x
Apprentice school	61	120,3525	x			x
Primary school	56	162,4821	x	x	x	

On the basis of the findings, it is noted that at primary school level, there is a greater possibility of creative work and development of creative and divergent thinking, whether the structure of school subjects allows it, or atmosphere and attitude of teachers to pupils and their behaviour. During this period behaviour and actions of the teenager need to be guided. Parents are responsible for teenager's behaviour and learning outcomes. From the adult viewpoint, the teenager is still considered to be a child who needs to be guided, commended and to have reasonably ensured leisure time activities as well as to know parent's opinion. Teenager spends a lot of time on hobbies - sport, dance, technical, art, music, etc., with a space for creative self-realization, which was also manifested in the research results. Poráčová (2010) states that if the school atmosphere is more relaxed, without fear and stress, it provides the opportunity develop pupils' creativity.

The Hotel Academy respondents with the lowest score have fewer subjects in their school subject structure that allow them to develop creativity. After negative experience in communication with adults, they were not even interested in completing TTCT test and they gave the impression of being bored. Respondents haven't been offered a drawing activity, which surprised them. The Hotel Academy graduates, apart from theoretical knowledge master practical skills, language skills and within only some subjects (such as table etiquette, etc.) have the opportunity to express themselves creatively. Preparation for their future profession mainly includes: technology of food preparation, hotel industry and communication with customers or flexible behaviour. During the assessment of the *originality* factor, significant differences were not observed. This was assumed from the flexibility assessment, in which very few respondents completed the TTCT test differently than other respondents.

Table 3: School results and Creativity

	School results	Fluency	Flexibility	Originality
Primary school				
school results	1,000000	0,009735	- 0,349604	0,019689
fluency	0,009735	1,000000	- 0, 034962	- 0,050841
flexibility	- 0,349604	- 0, 034962	1,000000	- 0,060091
originality	0,019689	- 0,050841	- 0,060091	1,000000
Grammar school				
school results	1,000000	0,138135	- 0,074076	-
fluency	0,138135	1,000000	0, 393613	-
flexibility	- 0,074076	0, 393613	1,000000	-
originality	-	-	-	1,000000
Hotel Academy				
school results	1,000000	0,062639	- 0,121637	- 0,019845
fluency	0,062639	1,000000	0,286878	- 0,007936
flexibility	- 0,121637	0,286878	1,000000	0,091451
originality	- 0,019845	- 0,007936	0,091451	1,000000
Apprentice school				
school results	1,000000	- 0,012493	- 0,292131	-
fluency	- 0,012493	1,000000	0,334389	-
flexibility	- 0,292131	0,334389	1,000000	-
originality	-	-	-	1,000000

Source: own creation

Dependence between school results and flexibility was observed among primary school respondents. The better school results of respondents were, the higher their flexibility was. It was proven by higher number of subjects in TTCT test circles. The dependence between school results and fluency was not confirmed in this group of respondents. The dependence between fluency and flexibility was confirmed among adolescent respondents, which means that they filled in TTCT test as many circles as possible with colour and at the same time they proposed high number of infrequent ideas. The better respondents were in terms of fluency and flexibility, the better school results they had. There was examined the modal preferences of the university students in Komarno, Slovakia (Fleming's model was applied). There is substantial evidence for the existence of modality-specific processing strengths and weaknesses (in visual, auditory, read/write or kinaesthetic/tactile dimensions) in people with various types of learning difficulty. The proportion of students with moderate modality preference was significant, mostly in reading and writing, and in the

kinaesthetic dimension, significant differences can be observed, especially for those attending secondary apprentice schools (Tóth, 2018).

3.1 Problem identification

During the next meeting, each respondent identified problems and situations that are causing the problem behaviour of young people by brainwriting method.

Teenagers, in comparison to adolescents, identified fewer problems and situations related to the problem behaviour of young people. The most serious problems they stated are: family problems, school problems, classmate relationships, teacher-pupil relationships, drugs and addictions, adult misunderstanding, love problems, stress, aggression and egoism, sloppiness, non-acceptance and truancy. In contradistinction to teenagers, adolescents consider drugs and alcoholism to be the most serious problem in behaviour, what points out their more responsible approach to life and health. While teenagers regarded addictions more as an opportunity to impress, show off, "to be cool" or to become a part of the group, adolescents emphasized the danger of addictions and its impact on loss of meaning in life, entitlement to self-realization, and employment. The adolescents identified the most serious problems - drugs, alcoholism and addiction, adult misapprehension, money and to be "cool" because of it, racism, aggression, falsity, falsehood and pretence, stress, fear to express own opinion, sex and love, school problems, groups of friends and peers, opportunity to be a part of these groups. The identified problems of adolescents reflect their age-related problems, however society-related problems that they perceive as negative and serious may be observed as well.

4 Conclusion

We are living in an era of rapid development, rapid change and adaptation to new conditions. Sometimes we are looking for ourselves in a "chaotic patchwork" of responsibilities, relationships and own ambitions. On this path of life, our actions and behaviour are influenced by quality of relationships and people, who we have met as well as people, who we have spent a shorter or longer period of time. The period of life called education should have a positive impact and help overcome obstacles and pitfalls of study and life. Teaching is based not only on knowledge transfer, but also on the quality of teacher and pupil relationship, on the understanding of pupil's problems, on the mutual empathy and willingness to listen and help. The teacher should be aware of pupils' interests, aspirations, opinions and ideas. Young people's attitude to life and their behaviour can be changed by willingness to be understood from adults.

It is important for pedagogy theory and practice to identify problem behaviour of teenagers and adolescents not only by teachers, parents and experts, but also teenagers and adolescents should be aware of these problems and point out possible solutions.

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Primary Paper Section: A

Secondary Paper Section: AM

PROCEDURAL FEATURES OF JUDICIAL PROCEEDINGS ON PENSION AWARD IN THE RUSSIAN FEDERATION

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Abstract: The publication considers the procedural features of judicial proceedings on pension award in the Russian Federation. The issue is relevant due to legislative changes. Due to the changes, the amount of pension capital has become significantly different from the expectations of citizens who had a certain work experience and a minimum amount of pension contributions. The pension reform in Russia aimed at retirement age increase has affected not only the younger generation but also put the citizens of preretirement age in a bind. Russian courts are forced to function under ambiguous interpretation of legislation and uncertainty of the evidentiary basis affecting the enforcement of a basic social right for pension provision.

Key words: pension dispute, right to relief in court, human rights and freedoms protection, benefit of trial within a reasonable time, compensation for infringement of a benefit of trial within a reasonable time, pensions, Russian legislation.

1 Introduction

In 2018 another pension reform was declared in the Russian Federation. Its major provision is focused on retirement age increase (from 60 to 65 for men and from 55 to 60 for women). Alongside with these changes an alternative system of pension coefficients was implemented; it had an impact not only on the amount of pension payments, but the very possibility to receive the insurance pension (instead of the minimal social pension).

These amendments forced citizens to appeal to courts with a claim to assess the legality of refusals of pension award and calculations. So in 2018 the number of disputes related to pension legislation amounted to 94,052 cases¹. It is particularly noteworthy that the number of satisfied claims significantly exceeds the number of refusals and amounted to 82,540 cases in 2018 (87.8% of the total number of pension disputes). However, only 9,715 cases were related to contestation of refusals to grant pensions. Most disputes concerned issues of incorrect calculation of pensionable earnings (30,225 cases) or provision of additional benefits (18,266 cases).

Nevertheless, the share of cases related to award of pensions is increasing: from 6,563 in 2016 to 9,715 in 2018, which is a 48% increase over the two-year period. These statistics contribute to the conclusion that enforcement of pension rights in Russia is a relevant issue. And while the burden on the courts is increasing, the Supreme Court of the Russian Federation is forced to standardize the procedural conditions for such cases.

2 Methods

For the purposes of the research the authors applied a wide range of traditional methods for legal studies. The scope of legal acts and bylaws has been identified with a help of a systemic and functional approach. Its application was aimed to determine the court jurisdiction limitations when considering cases related to pension payments. In order to reveal the essence of terms and definitions widely used in these cases a number of philosophical and legal methods were applied. Among them, a hermeneutic approach allowed the authors establishing the real content of legal norms. In order to determine the trends in court practice the authors employed the historical and legal method and the method of comparative analysis. The formal legal approach allowed the authors to check if the court practice is compliant

with the current legislation. In addition, the authors used the method of complex analysis to be able to make practical conclusions based of existing legal theories.

3 Results and discussion

In 2012 the Plenum of the Supreme Court of the Russian Federation adopted a generalizing resolution that formulated its position on the interpretation of pension and procedural legislation². Separately, the number of supplementary acts were adopted in order to clarify the issues related to jurisdiction of pension cases and the scope of legal acts to be applied.

Here it should be noted that the pension relations are subject to administrative legislation³. A citizen, who seeks to enforce his right to be awarded a pension, is to apply to the department of the Pension Fund of the Russian Federation, an institution endowed with authority and administrative powers⁴. Unlike in a majority of developed countries, the pension insurance agreement is absent in Russia. The Pension Fund is not the agency of state authority and it is vested with a wide discretion when awarding pension payments. Thus, the citizen is in a dependent position, and his relations with the Pension Fund are vertically oriented.

In 2016 the Plenum of the Supreme Court of the Russian Federation clarified that pension cases cannot be considered according to the rules of administrative justice⁵. This conclusion substantiates that violated pension rights are to be considered within the scope of the Code of civil procedure adopted in 2002⁶. So the related disputes cannot be regulated by the Code of administrative legal proceedings adopted in 2015⁷.

The defense of a pension right as a civil procedure led to application of adversary justice general rules in courts. In particular, when appealing against decisions of the Pension Fund of Russia, a citizen must appeal to the court of general jurisdiction on the territory where the corresponding branch is located. This requirement often substantiates the refusals to accept claims by Russian courts. Elderly citizens who worked in different regions of Russia throughout their career are forced to apply to courts in other regions outside their place of residence. Therefore, rights advocates emphasize the need to consider the alternative jurisdiction of pension disputes⁸. Russia's citizens should have a legal opportunity to defend their pension rights in courts at the place of residence, because their age and health conditions contrasted to the vast distance between Russian regions do not help to protect their legitimate interests.

The rules of judicial and administrative jurisdiction are normally applied in pension disputes. Also, if the amount in dispute is fixed and does not exceed 50 thousand rubles, such disputes are considered by the magistrates' court. In Russia the average

²Resolution of the plenum of the Supreme Court of the Russian Federation of December 11, 2012 no. 30 (updated on May 28, 2019) "On court practice regarding actions for enforcement of the right for retirement pension" // Rossiyskaya Gazeta – no. 295 – December 21, 2012

³Cook L., Aasland A., Prisyazhnyuk D. Russian pension reform under quadruple influence // Problems of Post-Communism. – 2019. – Vol. 66. – №. 2. – pp. 96-108. Nepp A., Okrah J. Financial And Social Sustainability Pension Systems In The Face Of Demographic Risks // CBU International Conference Proceedings. – 2017. – Vol. 5. – pp. 331-336

⁴Gietel-Basten S. et al. Ageing in Russia: Regional inequalities and pension reform. – HKUST Institute for Emerging Market Studies, 2017. – №. 2017-49

⁵Resolution of the plenum of the Supreme Court of the Russian Federation of September 27, 2016 no. 36 "On court practice regarding application of the Code of civil procedure of the Russian Federation" // Bulletin of the Supreme court of the Russian Federation – no. 11 – 2016.

⁶Code of civil procedure of the Russian Federation of November 14, 2002, no. 138-FL (updated on December 02, 2019) // Corpus of legislative acts of the Russian Federation – 2002 – no. 46. – p. 4532; 2019 (Part V) - no 49 - art. 6965.

⁷Code of Administrative Judicial Procedure of the Russian Federation of March 08, 2015 no. 21-FL (updated on December 27, 2019) // Corpus of legislative acts of the Russian Federation – 2015 – no. 10. – p. 1391; 2019. – no. 52 (Part I). - art. 7812.

⁸Alexander N. et al. Institutional Risks: General Principles of Influence on Pension Systems // Eurasian Business Perspectives. – Springer, Cham, 2018. – pp. 357-365. Gontmakher E. Mandatory Social Insurance in Russia: Ways of Reforming // Russian Politics. – 2019. – Vol. 4. – №. 4. – pp. 447-465

¹According to the Agency of legal information [electronic source] <http://rapsnews.ru> (access date - March 27, 2020)

amount of regular pension payment is lower, so the majority of disputes are taken by magistrates' courts. District courts deal with all other pension cases and also act as the appeal body considering magistrates' courts decisions. However, non-transparent and sometimes contradictory rules of jurisdiction cause situations where district and city courts refuse to consider pension cases and refer citizens to magistrates. And, on the contrary, at magistrates' courts they tend to refer those cases to district courts causing numerous violation of the Russian procedural law – in accordance with the procedural law any disputes between courts related to jurisdiction over cases are prohibited.

As a result of several pension reforms carried out in Russia, the courts make their decisions not based on the total work experience that matters, but the so-called "pension insurance" experience. Therefore, citizens lost the opportunity to prove the fact of performing labor functions in alternative ways. The only calculations the courts take into account are the ones provided by the Pension Fund based on the citizens' personal accounts used by employers to transfer pension payments. This approach often leads to problems in judicial practice. The citizen himself has few opportunities to control the way an employer fulfills social insurance obligations. So, quite often citizens find out that the amount of insurance contributions is insufficient only when they apply to the Pension Fund or to the court.

The only amendment that has been recently made is on the right of a citizen to recover overdue insurance payments from an employer. Therefore, the Plenum of the Supreme Court of the Russian Federation notes that the "insured person" (employee or former employee) may file a separate suit against the employer, but the amount collected is to be transferred to his personal account at the Pension Fund.

This procedural feature seems to be bizarre, as the Pension Fund itself is responsible to control the way employers fulfill their obligations for on time insurance payments. We also have to mention that the regional departments of the Pension Fund have similar powers. So the judicial interpretation of the citizen's right is reduced to expression of his interest to rapid resolution of such disputes since the controlling bodies normally deal with such issues for a long period of time.

If the pension disputes in Russia are not related to administrative justice, then the procedural legislation allows conclusion of settlement agreement between the parties. As a general rule, Russian courts, following the European trends, are ought to facilitate peaceful settlement, which means - without a standard court procedure. However, in practice, this way to resolve pension disputes is not applied.

Legal scholars emphasize that pension relationships are public and subject to the influence of public norms⁹. Due to this, the conclusion of settlement agreements (as a private legal instrument) in courts is not permissible¹⁰. We believe that this approach should be considered obsolete, since in the context of ongoing pension reforms and westernization of Russian legislation all issues related to pension rights should have an agreement and insurance basis. This means that settlement agreements should become the major means of resolving pension disputes in the Russian Federation.

Another feature of pension disputes resolution in Russian courts is associated with the unvoiced prohibition to collect compensations for moral damage in favor of citizens. On the one hand, the law neither provides any direct restrictions nor establishes such a right. On the other hand, the Plenum of the Supreme Court of the Russian Federation designated such prohibition as a rule of law. Many legal experts adhere to the opinion that the case law in the Russian Federation does not exist. However, the current procedural law obliges all lower

courts to obey the general conclusions of the Supreme Court of Russia. As a result, all gaps and uncertainties of the pension legislation are regulated by judicial precedents.

This approach should be recognized as a global trend, since in a number of European countries and even in the USA all pension claims are considered as property disputes. At the same time, a citizen, whose claim for pension payments was unjustifiably or unlawfully refused, may experience strong moral distress. Taking into account the faulty management practice of the Pension Fund of Russia, it is necessary to extend the right to compensation for non-pecuniary damage in relation to pension disputes. Moreover, the civil legislation of the Russian Federation provides the general basis for such a possibility.

It is worth mentioning that the Russian courts lack the power to grant pensions to people who applied to courts for legal protection. By making decisions the court only obliges the Pension Fund of Russia to award a certain type of pension. Courts can also force it to take into account those circumstances that have been proven in the civil process, if this can affect the type and amount of pension payments. In order to implement this procedure, court decisions should contain detailed instructions on what exactly the Pension Fund must do to enforce the court decision.

4 Summary

The Russian pension legislation contains a number of legal norms to detail the procedure of pension award. However, their redundancy and inconsistency allow the higher courts to initiate new rules and approaches. Limitation of settlement agreements and existence of the right for non-pecuniary damage award are major requirements of the judicial practice. In part, these requirements stray from the international approach, but the findings of the Supreme Court of the Russian Federation on certain issues are consistent with the existing judicial practice in European and North American countries when considering pension cases.

Russian courts are forced to function in the legal context of ambiguous interpretation of legislation and uncertainty of the evidence basis that have an impact on the pension rights enforcement. As a result, the pension cases are becoming more precedent-setting and the range of judicial discretion is expanding.

5 Conclusions

Despite of the ongoing pension reform in Russia, the courts are overwhelmed by pension cases. The majority of these cases are typical disputes related to the Pension Fund practice, which is a living proof that the Pension Fund of Russia is required to change its approach when working with citizens. If the number of court decisions against the Pension Fund is increasing, then the state is to intervene in the activities of the authorized institution to cease unreasonably narrow or wide interpretation of pension legislation. Only these measures can help relieving the burden of pension disputes in courts.

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⁹ Gurvich E. T. The junctions of pension reforms: Russian and international experience // *Voprosy Ekonomiki*. – 2019. – №. 9. – pp. 5-39

¹⁰ Gabdrakhmanov N. K. Problem of formation of pension capital in the Russian Federation // *Revista San Gregorio*. – 2018. – Vol. 1. – №. 27

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Primary Paper Section: A

Secondary Paper Section: AG

B PHYSICS AND MATHEMATICS

BA	GENERAL MATHEMATICS
BB	APPLIED STATISTICS, OPERATIONAL RESEARCH
BC	THEORY AND MANAGEMENT SYSTEMS
BD	INFORMATION THEORY
BE	THEORETICAL PHYSICS
BF	ELEMENTARY PARTICLE THEORY AND HIGH ENERGY PHYSICS
BG	NUCLEAR, ATOMIC AND MOLECULAR PHYSICS, ACCELERATORS
BH	OPTICS, MASERS AND LASERS
BI	ACOUSTICS AND OSCILLATION
BJ	THERMODYNAMICS
BK	LIQUID MECHANICS
BL	PLASMA PHYSICS AND DISCHARGE THROUGH GASES
BM	SOLID-STATE PHYSICS AND MAGNETISM
BN	ASTRONOMY AND CELESTIAL MECHANICS, ASTROPHYSICS
BO	BIOPHYSICS

DEVELOPMENT OF LOGICAL THINKING USING EXCEL

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Abstract: Nowadays full of information technology, it is important to provide valuable information in teaching or research that can adapt the content of education to the needs of a rapidly developing society. It is our targeted step towards achieving the desired adaptation of educational content to provide such suitable application materials using the Excel. The computing systems guide the development of abilities and the basic factors of students' thinking in learning mathematics. The use of these tools in solving various practical problems truly penetrates all mathematical disciplines and today we are able to solve the most diverse mathematical problems thanks to properly designed program. Nowadays, there are many modern complex environments such as Excel, whose use in selected mathematical applications we want to bring near at least briefly in our article. The Excel software provides us with various implemented functions, commands and programming language enabling implementation of various algorithms. Our work is focused on creating several tasks for the development of logical thinking. Tasks are in the form of application examples using cross-subject relationships. The assignment of tasks is for students of vocational schools of economics. The tasks use the logical function "IF" in Excel and focus on the application of knowledge from specialized subjects. To use this function, it is necessary to formulate a logical test that has a clear criterion and exhausts all cases that may occur in decision making. Using Excel also offers the opportunity to expand tasks and then experiment with tasks. The information presented in our article can be used in various mathematical disciplines to solve or automate the solution of a wide range of problems, so that the text can be used by students who are just beginning to use the Excel environment to solve and understand the principle of problems using the implemented functions such as a „IF“ condition.

Keywords: logical test in Excel; Hawk-Dove model; BlackJack; Minesweeper; Eight Queens Problem; Knight on the chessboard

1 Introduction

Recently, there has been more talk about the need to develop logical thinking. This pressure to develop logical thinking is because logical thinking does not only serve the needs of the subject being taught but is also a key factor in integrating an individual into society. Interdisciplinary relationships can be used to develop logical thinking. When applying cross-subject relationships, tasks become more demanding, but their real focus makes them more interesting for students. Also, the inclusion of cross-subject relationships forces students to reach the knowledge. When solving such tasks, it is necessary to identify and classify the problem in the first step. The subsequent solution is already specific to the task.

One of the greatest human priorities is the ability to adapt. The development of scientific and technological progress is also related to the involvement of computation technique and computers in social life. Consequently, education has been adapted to this progress by including Information and Communication Technologies (ICT) into the educational environment. In the work [1], the author points out the motivational aspects of ICT, the necessary skills for using ICT in teaching and the possibilities of searching and processing information, immediate feedback and visualization, thus offering a different perspective on the subject matter. In the paper [2], we see a focus on an ICT device, an interactive whiteboard, and find the impact of this inclusion in the classroom. The work points out the advantages of the interactive whiteboard for speeding up learning, raising students' attention or better classroom management. It points out the disadvantages of home teacher training when preparing the applications for lessons and the affordability of the interactive whiteboard. A critical view of the use of ICT in teaching can be found in the article [3], in which the author points out the benefits of ICT, which are discussed but have not been unequivocally proven. A similar critical view of ICT can be found in [4]. In this work, the author compares traditional teaching with teaching supported by ICT. It points out the disadvantages of software in classes with a large diversity of students. In this case, the teacher's preparation for the lesson is more difficult. Direct work on the relationship between ICT and teaching mathematics can be found in the publication [5]. Here, the author points out the advantages of ICT in the teaching of

mathematics, such as the possibility of visualizing the problem, facilitating computational problems and didactic games in the ICT environment. The general characteristics of ICT can be found e.g. in work [6], where the author observes the inclusion of ICT into the educational environment. It highlights the benefits of ICT, both as a tool for information retrieval and knowledge testing. Also, it points to the creation of conceptual structure using hyperlinks, where, based on the keywords in the text, we can create more complex information structures. Another publication focusing on ICT and education is [7] in which the author focuses on modernizing education and information literacy, which is gradually ranked among the necessary skills of the current era. For specific use of ICT in mathematics, book publication [8] focusing on teaching CAS-supported mathematics, i.e. computer algebra systems, is appropriate. The thesis points out the advantages of involving this software in teaching and the differences between the numerical solution and analytical solution of special examples. Some tasks act as motivational tasks for each type of software. The use of ICT in mathematics is also addressed in publication [9] which highlights the modernization of teaching through the appropriate inclusion of ICT and the possibilities of electronic textbooks, dynamic geometric software, and graphic calculators.

In addition to the general use of ICT in teaching, spreadsheets teaching is a separate category. In the article [10], we find a brief overview of the history of spreadsheets in the teaching process and the primary use of calculators in teaching databases and plotting function using LOTUS 1-2-3. Spreadsheet calculators such as SuperCalc, MultiPlan or PlanPerfect, and many others gradually replaced the emerging versions of Excel, whose predecessor was MultiPlan. Beginning versions of Excel gradually created an educational environment for the introduction to programming and the creation of various computational algorithms. Direct inclusion in the teaching of mathematics points to the possibility of using Excel for various experiments in the field of number theory, combinatorics, statistics or probability. In terms of application, Excel has come to the forefront both in commercial use and in teaching. An interesting task that requires some skills in the Excel environment but has a motivational character for students is the familiar Sudoku puzzle. See [11] for instructions on how to build a Sudoku puzzle using Excel. In addition to the instructions, there are also methodological notes for teachers. The use of Excel in teaching probability can be found e.g. in the work [12]. In this paper, the author uses Excel to simulate random phenomena such as coin-flipping or dice rolling and points out the distribution functions of random phenomena. Another application in the teaching of mathematics can be seen in the work [13]. In this work, we see the use of Excel in solving non-linear equations using two methods. The first method is graphical, in which it is possible to draw a graph that can be zoomed in at selected intervals and get a solution with any accuracy. The second way is a numerical solution, which offers us also the possibility of a specified accuracy. Among other ICT-related work in mathematics, work [14] is of interest. In this work, the author uses Excel to model various natural and physical phenomena. The work thus points to the possibility of using the Excel environment to zoom in to selected areas e.g. in biology and physics. Using numerical and graphical solutions, it also presents demanding problems, such as population growth or free fall of a body in an air resistance environment. A similar use of Excel to simulate physical phenomena can be found in [15]. The possibility of Excel to prepare future mathematics teachers can be found in publications [16]. Here, the author points to a mathematical game, which is subsequently modified for the Excel environment, and the difficulty of which can be gradually modified and changed. As we can see, the Excel environment offers a few applications and thus deserves to be included in the learning environment as a supporting ICT tool. To better apply Excel in the teaching of mathematics, it is necessary to summarize the functions of mathematics of today's teaching of mathematics.

2 Mathematics functions and problems in mathematics

The development of natural sciences and technology leads to discoveries and to the use of many different laws needed to solve difficult problems, using extensive calculations based on special mathematical methods. Mathematical concepts and theories are directly related to the material world that surrounds us. It follows that the concepts are derived from reality, although many were created by multiple abstractions. Also, the logic in mathematics is the same as in other natural sciences, even the position of logic in mathematics is much higher. Empirical conviction suffices about the truth of the phenomenon in other sciences, while in mathematics the main emphasis is on the logical structure and its consequences. An example of the geometry of the sum of the internal angles in a triangle is a good example of this difference from other sciences. From an empirical point of view, it is correct to say that the sum of the internal angles in the triangle is $\alpha + \beta + \gamma = 180^\circ$. On the other hand, by examining the sum of the internal angles of the triangle, it led to the development of geometry and the division of geometry into Euclidean geometry and non-Euclidean geometry. Both types of geometry have their representation in the real world. There is often a discovery, or generalization, in science that overtakes the scientific field for a long time, and this creates the foundations for the scientific discipline. If such discoveries do not immediately have their application in practice, we speak of pure (theoretical) mathematics. In this case, a set of new knowledge and computational techniques is created, ready for later use. Examples of this are e.g. the discovery of non-Euclidean geometry that is used in relativity theory or discoveries from abstract algebra that form the basis for modern physics.

Mathematical knowledge is developed by tasks. Tasks are defined as various exercises, examples, appropriate questions and various situations that require creative activity from the student's side. An important factor is which task we present to students and in which form we present it. The tasks have different difficulty and different cognitive functions. Tasks and their solutions are creative content of teaching mathematics at all types and levels of schools. Tasks are the bearer of knowledge, abilities, and skills, they are manifestations of methods of work in the given area of human knowledge and a means of solving practical problems. From the point of teaching objectives, mathematical tasks fulfil these functions: *educational* (aimed at forming mathematical knowledge, habits and skills at different levels of their acquisition), *upbringing* (aimed at shaping students' interest in independence, creativity and moral qualities) and *developing* (focused on acquiring effective ways of reasoning and thinking). In the theory of mathematics teaching, the basic functions of mathematical tasks are: *the local objective of teaching mathematics* (the tasks develop mathematical knowledge, assist in the acquisition of mathematical syllabus, and the local objective depends on the objectives of teaching mathematics), *the means of teaching mathematics* (the tasks are the tool by which we achieve the planned results) and *the means of teaching the methods of solving* (through solving the tasks we also teach the methods by which different tasks are solved). The first function of the tasks, i.e. the local objective, is related to the position of the objectives of teaching mathematics. The learning goal is most often taken as a result of teaching. These goals can be formulated in the tasks outlined in the standards. The other two functions as a means of teaching enable a comprehensive view of the whole content of the learning process. Teaching mathematics is mainly a cognitive process. We teach mathematics through tasks and simultaneously teach methods of solving mathematical problems.

Through the tasks we ensure the fulfilment of general learning objectives: *mathematical knowledge and art* (students should acquire basic mathematical knowledge and skills, abilities and insights into different mathematical topics and know how to use them, they should be familiar with mathematical methods and ways of thinking), *use of mathematics in off-mathematics areas* (students acquire the ability to use their mathematical knowledge and art in different areas, especially those related to their experience and knowledge, yet to have insights into the

problems of mathematical applications), *general abilities* (using mathematical tasks, we support the ability of exact work and argumentation, presentation and interpretation of the facts, and solving mathematical tasks also supports productive mental work and develops critical thinking) and *personal and social development* (we lead students to careful, focused, and planned work, investigating the situation and problems in solving tasks, solving them with rational thinking, but it is necessary to look at the boundaries of the use of such thinking).

In the teaching process, we look at tasks as two basic types: *standard* (memory-oriented and algorithmic thinking, the main goal of which is to practice procedures and methods of solution, these tasks do not represent an effort for the intellect and therefore do not act as a challenge for the student); and *non-standard* (this task type is more demanding because these tasks do not require a routine solution, they act as a challenge to the intellect and are motivational). There are two types of standard tasks: tasks requiring a well-known rule and tasks using repetitions already known [17]. We usually solve the first type of problems mechanically using a known algorithm. The student gets to the solution without difficulty and this type of tasks does not require any ingenuity. The second type of standard tasks focus on small, isolated objectives of mathematical knowledge. They fulfil a control function, they are assigned to the students to check whether they are familiar with the basic relationships, concepts, procedures, symbols, and their meaning. The solution of this type of tasks is memory oriented. Solving the standard type of tasks is essential for studying mathematics. Non-standard tasks are more interesting than many standard tasks but are usually more demanding. Non-standard tasks often have a motivational position in teaching mathematics and their solution is about discovering ingenuity, thinking and finding new ways to solve tasks. Developing students' cognitive abilities as one of the main objectives of the school is possible only through an active discovery process. In every task, we solve a problem in which something is objectively specified and something is unknown. We solve such problem in phases: *understanding of the problem* (orientation in the problem and its understanding), *strategic-operational phase* (thought-intensive and solving the mathematical task itself), *synthetic-verification phase* (verification of hypotheses and methods). These phases include interdependent processes: *analysis*, *synthesis* and *generalization and abstraction*. These processes are unconditionally related, and their use makes it possible to discover the unknown if they are subordinate to a specific goal. In school practice, it is a solution of the task or finding a valid rule to solve a problem. Intellectual abilities, i.e. intellectual operations abilities, abilities to understand the content, problem-solving abilities can be developed by solving non-standard tasks.

Tasks in terms of the structure of the cognitive process can be divided into: *Tasks to motivate students' learning activities* (which include tasks related to students' surroundings suitable for strategic motivation and students' interest, problematic tasks with mathematical content and historical tasks with mathematical content), *tasks for clarification and initial acquisition of essential properties of concepts and ways of solving tasks* (which include motivational tasks and tasks arranged with increasing degree of entropy so that the given knowledge arises as an abstraction and generalization of acquired experience in solving them); *tasks for fixing syllabus* (which include tasks of the type "by the pattern" or tasks of the type "find the error" and systematic and creativity tasks), *application tasks* (including tasks related to general professional basics, social and natural phenomena, or real-life learners' experience and knowledge; and tasks connected with the future vocation of students, which are closely linked to vocational and practical training for the profession), *tasks of a propaedeutic nature* (which include tasks for revising previously acquired knowledge and aptitude needed to acquire new syllabus, tasks to guide and facilitate students' cognitive activity of students in the following tasks within the thematic unit and tasks that fulfil a mainly developing function in the given thematic unit and are also preparatory tasks for acquiring the syllabus elements in other thematic units), *tasks for revising and systematizing the*

syllabus (that include the tasks for word characteristics of the method of solution of a class of tasks, the task for integrating the methods of solution, for comparing different methods of solution, the task of finding opportunities to use the knowledge in practice and other disciplines, and the task of creating logic schemes) [18].

Verbal tasks are a special type of task. This type of task is characterized by the fact that the dependence between given and searched data is determined verbally. Many of these tasks are practical. It is necessary to find out in the verbal tasks based on appropriate considerations what computational tasks we must perform to be able to answer all the questions asked based on the entered data. When solving verbal problems, it is necessary to clearly formulate the mathematical problem resulting from it and this process is called *mathematization*. A verbal task may contain information that is irrelevant to the solution. Formulating a mathematical task from a verbal task requires an understanding of the assignment of the word task and the subsequent separation of the essential information from the non-essential information. The solution of a verbal problem consists of three phases: *analysis of the task* (familiarization with the task, determining the question, determining the conditions, checking the knowledge of terms and relationships), *drawing up the solution plan* (illustration, determining the solution procedure) and *calculation* (execution of calculations, checking correctness of calculations and result, answer). Cognition is a complex process that is mediated in nature. When proceeding from the unknown to the knowledge, the student acquires information that has the value of new knowledge, i.e. the learning process is an active process of cognition because, from the student's side, it is subjectively new information. By serving a group of tasks that must be solved in a certain order, is determined the system of activity and the structure of the cognitive process. Acquiring knowledge means being able to use it in at least simple situations, which is reflected in skills and habits. Tasks that relate to the knowledge system form a task system. Any system of tasks related to a given topic should combine requirements based on the principles of the cognition process and the principles of the learning process with its external and internal conditions. Creating a task system requires procedures to be followed, e.g. logical and didactic analysis of the content, setting learning objectives and their concretization using representative tasks or creating a system of tasks, where tasks gradually represent specific didactic functions.

In addition to creating a system of tasks to acquire knowledge and competence, it is possible to create tasks aimed at developing higher cognitive functions to divergent thinking. When creating a system of tasks, it is advisable to have enough tasks aimed at mastering the procedure, but a large number of similar tasks may give the impression of a stereotype, leading to negative motivation. Also, there may be cases where a small change to a task may lead to a failure to resolve the task. To create a positive motivation in solving tasks, it is necessary: to teach students to logically analyse the tasks, not to seek solutions to a new task without former analysis, to examine the structural speciality of tasks, to seek solutions with general organization of work; to teach methods and schemes of activities and to teach students after finding a solution to do a reverse analysis of the solution in order to find another possible way of solution. The optimum situation is when the student accepts the task and solves it as his/her problem. Then the student ceases to solve the task under external pressure, which creates the conditions for the original solution.

3 Tasks for developing logical thinking solved in Excel

Computers and computing technique have a significant impact on all areas of life and therefore affect every individual. The use of computers in life is not only a matter of work but also a matter of leisure and learning. It is therefore appropriate if mathematics education is supported by ICT. By using ICT in the teaching of mathematics, we are freeing the tasks from routine calculations, whereupon we can emphasize other areas of teaching mathematics. Another option is to teach students to search and

process information. The ICT environment teaches students the appropriate questions and conditions they use to communicate with the computer and the ICT environment. The use of computer in teaching mathematics contributes to the fulfilment of various didactic functions: *motivational function* (computer use offers the possibility of experimentation, verification of various hypotheses, which can formulate a positive attitude to the issues), *information function* (by appropriate use of ICT it is possible to gather, store, process, present and disseminate information), *management function* (many tutorials are created interactively, i.e. the student receives immediate feedback and it is possible to manage an exchange of views between the student and the computer), *rationalization function* (by appropriate inclusion of ICT into the education process it is a possible control the teaching methods), *control function* (for the organization and management of the teaching process it is necessary to control the results achieved; ICT can effectively diagnose and evaluate results of the learning process), the *communication function* (ICT-supported teaching promotes mutual communication between students working in groups) and the *social function* (group work encourages discussions on the subject, weaker students acquire new knowledge in collaboration with their classmates; the role of the teacher in the teaching process is also changing and the teacher is no longer a central personality mediating the content, but only becomes an advisor to guide students).

Most definitions of logical thinking correspond to mathematical thinking to the extent that logical thinking is one of the basic parts of mathematical thinking. Also, in the teaching of mathematical logic, we often encounter the situation when the teacher leads students to master a certain algorithm, but this may deviate from the development of logical thinking. Therefore, the development of logical thinking involves not only deciding the veracity of statements based on propositional logic, but also the ability to create statements, sentences, and conditions. In Excel, the "IF" function is focused on creating conditions. Using it, it is possible to create decision algorithms, which supports algorithmic thinking, computational thinking, and logical thinking.

Tasks below are focused on "IF" condition. This type of tasks belongs to the teaching of Informatics and Information Technology at secondary economic schools. The aim of the courses in Informatics, Information Technology, and Applied Informatics is to teach students to work with information. Students will understand the basics of information technology and will learn to use the operating system, office software and work with common application software or specific software used in the relevant field of expertise. Our tasks are designed to motivate students and introduce them to a professional issue that they may encounter in their later studies. At the same time, our goal is for tasks to stimulate creativity and develop logical thinking by creating the conditions needed to solve tasks. Tasks were created to modify various well-known tasks in Excel.

Task 1: Hawk–dove

The hawk–dove example is one of the basic examples from the game theory describing social behaviour [19]. Since many of the implications of this model are known to the students from the technical subjects, this example is suitable for using Excel. The simple rules of this game offer the ability to create conditions using the "IF" function in Excel. The inspiration from nature was a designed model of the game, which reflects the real situation when a conflict arises. Position no. 1 "to agree and withdraw from requirements" represents the dove's strategy; position no. 2 "uncompromisingly enforcing its demands without the willingness to agree" is the hawk's strategy. If two doves meet, they can retreat from their requirements, so in principle, the game gets both players 5 points. If one player adopts the strategy of a dove and the other player adopts the strategy of a hawk, the dove shakes off and retreats to the hawk. In the game, this means that the dove receives 0 points and the hawk 10. The last option means that both players in the conflict situation take

the position of the hawk. Both hawks behave aggressively and in the simplified model we characterize the resulting state as an injury to both hawks and therefore both players get -10 points. Since it is a so-called evolutionary theory of games, it is advisable to create several rounds and finally count points. For a better understanding of the game, the students first played this game with each other, then against the computer, where they were already working on the algorithm, they implemented in Excel to calculate points.

When implemented in Excel, the table first defines student status and computer status. We take the computer as a random system, so we use a random number generator, where for the computer the numerical assignment 0 is a dove, 1 is a hawk. When counting points, numeric values are used to determine conditions, e.g. a dove-hawk meeting is understood as $0 - 1 = -1$, and if this condition is true, the dove has 0 points and hawk 1. The "IF" function can be used to create a multi-game strategy in which results can be used from the previous round. This offers the opportunity to experiment and look for a winning strategy in conflict resolution. To make it easier, it is advisable to create a flowchart to create a decision algorithm for point counting. The assignment of points must be created separately for both the student and the computer (Figure 1).

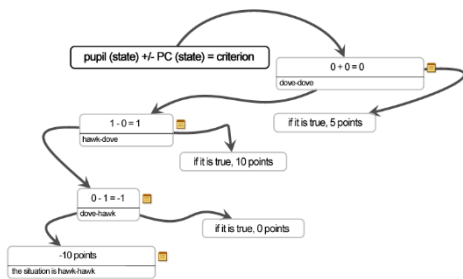


Figure 1. Flowchart for hawk-dove game solution

Then we create two tables in Excel, the first table shows the players' attitudes and the second table contains the sum of the points gained (Figure 2).

Pupil	PC	Score	Pupil	PC
0	1		0	2
0	0		1	1
0	0		1	1
0	1		0	2
1	0		2	2
1	1		-2	-2
0	0		1	1
0	0		1	1
0	0		1	1
1	0		2	2
1	1		-2	-2
		Result	5	9

Figure 2. Solving the hawk-dove task

We set the game for "PC" as random, so we used the `RANDBETWEEN (0; 1)` command to simulate it. The points for the player "Student" are determined by the command `IF (B3+C3=0;1;IF (B3+C3=2;-2;IF (B3-C3=1;2;0)))`, then we determine points for the player "PC" using the command `IF (B3+C3=0;1;IF (C3-B3;2;IF (B3+C3=2;-2;0)))`. These commands are copied in the column according to the number of rounds of the game.

In conclusion, we can say that the pupils played this game in pairs as first, so they better understood the principle of the game and started to think about winning strategies for a multi-round game. The "IF" function was used in the point counting, but the formulation of the conditions was not so clear for the students. After completing the implementation of the point counting

algorithm, students continued to experiment with finding a strategy. Preferred strategies were using the previous round, referring to real-life decision-making, considering previous experience. They used the formulation of the decision algorithm again to create a strategy referring to the previous round.

Task 2: BlackJack

The BlackJack card game is one of the most popular and, in principle, the simplest casino games. The advantage of this game is that it is not based purely on chance but offers strategy options. The predecessor of BlackJack is the French game *Vingt-Et-Un*, i.e. "21" (21 wins). As with 21 wins, BlackJack's principle is to approach 21 in the total of cards [20]. Cards numbered 2-7 have the real value of their number. Cards marked J, Q, K have a value of 10. The A-marked card has a discretionary value of 1 or 11. If we assign the value of 11, we are speaking of soft sum, otherwise, the sum is so-called hard. Depending on the cards, the player has the option of splitting the cards, which divides the game and starts a new game automatically with each card. This is also associated with doubling the stake.

To solve the implementation of this game in Excel, we need to realize that in BlackJack we use random card pulling, which we can ensure by generating random numbers. By linking random numbers to cards, cards marked with a number will retain their number, and cards with a letter will be determined using the "IF" condition. Also, when uncovering the cells that represent the drawn cards, the automatic recalculation option in cells [21] should be turned off. This will ensure that the cards are not changed during the game. Shuffle cards before a new game by pressing F9 to calculate the hand. We divide the cards in such a way that the card we want to separate (the division is according to the rules of 2 cards) is covered, i.e. the cell is coloured black. And we create a new column whose first cell has the same value as the cell that symbolizes the card. Other cells are refilled using random numbers. Unless you plan to split the cards, this column is covered, i.e. the cells are coloured black (Figure 3). To randomly shuffle cards, we use the following command: `RANDBETWEEN (2;14)`. To determine the card, use the command:

```
IF (A2<11;A2;IF (A2=11;J;IF (A2=12;Q;IF (A2=13;K;A)))
```

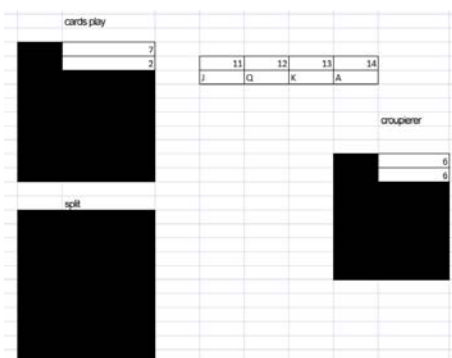


Figure 3. BlackJack game solution, swiping the card means uncolouring the black cell

Task 3: Mines

Mines play [22] belongs to computer logic games. The basis of this game is to gradually reveal the field, determining where we suppose a mine and where not. When a cell is successfully detected, we know how many mines are in its immediate vicinity. The difficulty of the game depends on the size of the field (we will create a 6 x 5 field in the task) and the probability of mines.

When solving a task in Excel it is necessary to define the basic characteristics of the task. This includes determining the size of the playing field and creating a system to determine the

field and one output field. This way, the task will be divided into three blocks. The first block is the input field where we insert the queen as number 1. With this numerical input, we can then use the basic operations (+, -, >, <, =) to determine the condition by which the output field determines which fields (cells) are suitable for laying the queen, which fields are occupied, and which fields are endangered by queens already saved. The input field shown in Figure 8 represents the chessboard where we put the queen as number 1. The rows and columns are standard according to the chessboard, with the white box below. Marking rows and columns makes it easier for us to navigate between the input field and the output field, where we can see free positions.

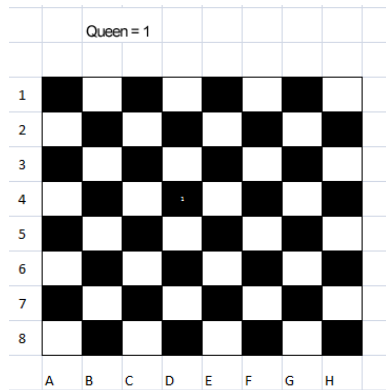


Figure 8. The chessboard on which we put the queen marked as number 1

The auxiliary field will be a chessboard with the same dimensions, but unmarked, and will be surrounded by 0 and connect it to the chessboard on which the pieces will be placed. This makes it easier for us to expand the field by zero positions (Figure 9). This means that we consider the queen's surroundings in a row, column, and diagonals up to 7 spaces.

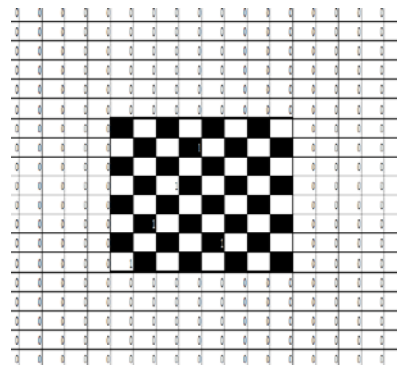


Figure 9. An auxiliary field that we use to identify fields that are endangered by a queen

Any field that threatens a queen from a certain position is a field where a laid queen would threaten another laid queen. In the output field, we insert a condition in the form: if the cell in the input field contains 1, then write "Queen", otherwise in the auxiliary block if the sum in the line minus the value of the cell is less than 0, write "endangered" if this is not true, in the auxiliary block, if the sum in the column minus the value of the respective cell is less than 0, write "endangered", if this is not true, in the auxiliary block if the sum in the diagonals minus the value of the respective cell is less than 0, if this is not the case, leave an empty cell (Figure 10). Thus, this Excel command will be:

```
=IF (B5=1; "Queen"; IF (T1+T2+T3+T4+T5+T6+T7+T8+T10+T11+T13+T12+T14+T15+T16>0; "endangered"; IF (L9+M9+N9+O9+P9+Q9+R9+S9+U9+V9+W9+X9+Y9+Z9+AA9>0; "endangered"; IF (L1+M2+N3+O4+P5+Q6+R7+S8+T9+U10+V11+W12+X13+Y14+Z15+AA16+AB1+AA2+Z3+Y4+X5+W6+V7+U8+S10+R11+Q12+P13+O14+N1
```

5+M16+L17>0; "endangered"; " ")). This command is then copied over the entire chessboard, which is the output field.

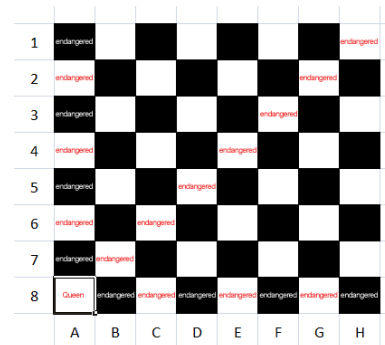


Figure 10. A working chessboard on which we have ticked boxes occupied or threatened by a laid queen

In conclusion, the Problem of the eight queens required, in the first step, an understanding of the principle of the queen's movement on the chessboard. Also, it was necessary to develop the principle of mapping the game field. When mapping the game field, we think similarly to the mines game, where we considered the cell surroundings except the cell itself. In the game of mines, all neighbouring cells formed the surrounding area, while in the problem of eight queens we consider the cells related to the movement of the queen.

Task 5: Movement of the knight on the chessboard

Chess directly affects the development of logical thinking. When playing this game, it is necessary to remember the rules and think strategically about the development of the game. When defining a game strategy, it is necessary to have, in addition to the rules knowledge, a spatial imagination of the possible distribution of pieces on the board. Also, strategy development encourages synthetic and analytical thinking, encourages creativity and patience. Another chess task we have implemented in the Excel environment is the Movement of the Knight on the Chessboard. The knight jumps in "L" shape in all possible directions from the current location so that one endpoint of the letter "L" is the current position and the other endpoint is the possible placement. If a piece is between the current position and the end position, it is skipped.

The task is directly linked to the problem of eight queens on the board. Also, in this task, it is necessary to realize first which places the knight can get from the current position (we understand these places as threatening places). As in the previous tasks, we will also use the auxiliary field to avoid cycling, as well as to avoid having to decide whether the knight is in the centre of the chessboard or on its edge. In the first step, we create a playing field (Figure 11) where we place the knight as number 1.

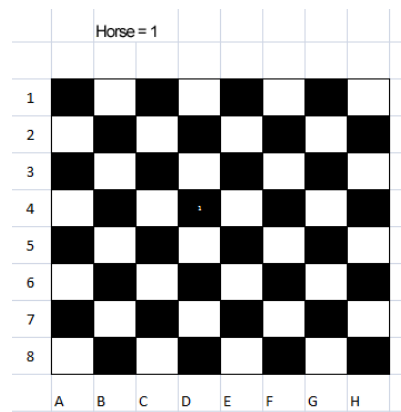


Figure 11. Input field where we insert the knight to the position as number 1

The movement of the knight is further determined by a simple condition. For the universality of the condition, create an auxiliary field (Figure 12). This auxiliary field is linked to the input field via links to get current position information in the auxiliary field. The auxiliary field is surrounded by a zero-field so that we are not limited by the edge of the chessboard.

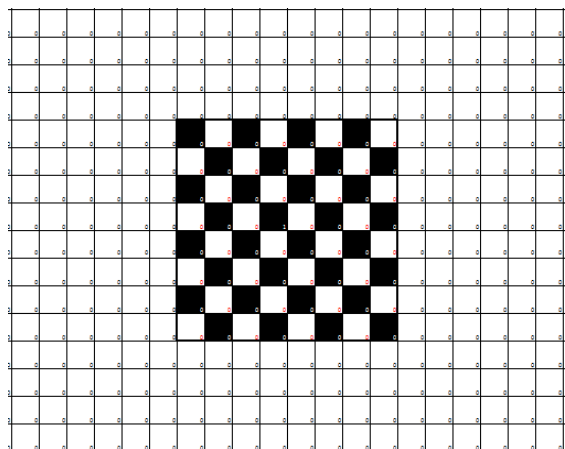


Figure 12. An auxiliary field consists of a chessboard surrounded by a zero field

The output field is linked to the helping field by a condition. If the corresponding cell has a value of 1 in the input field, an indication that it contains a knight. If it does not have a numerical value, then we create a condition aimed at checking the surrounding cell of the corresponding cell in the auxiliary field according to the movement of the knight. In the output field (Figure 13) you can see the free positions, the positions where the knight is located and the positions that the knight endangers. The process of compiling a queen's movement differs only in the last step, and our condition will have the form:

=IF(B12=1;"Horse";IF(U14+V15+S14+R15+V17+U18+S18+R17>0;"endangered";" ")). This command is then copied over the entire output field.

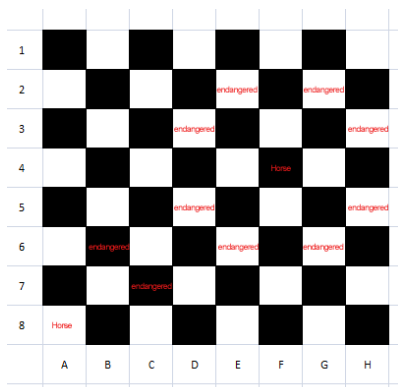


Figure 13. Output field for the knight's movement, we see where the knight is located, and which fields endanger his movement

Using this task, we were able to bring the knight on the chessboard closer to the students and thus increase their orientation on the chessboard. The solution of the task itself is in the formulation of a simple condition through which we can map a chessboard field. The task does not have to be completed by making an output field, but students can then experiment with the layout of the knights on the chessboard.

4 The survey and results

Tasks were included in the teaching at the economics-type secondary vocational school in the 3rd and 4th years at the Applied Informatics classes, in the order given in this paper. The

tasks created should serve to test the ability to use the "IF" function. After solving the tasks, the students were to evaluate the tasks based on the questions asked:

1. Did you like the tasks we assigned to you?
2. Do you feel that these tasks will help you work in Excel?
3. Do you consider teaching in Excel to be beneficial?

Student assignments rated 1-5, with 1 being the best and 5 the worst (Figure 14).

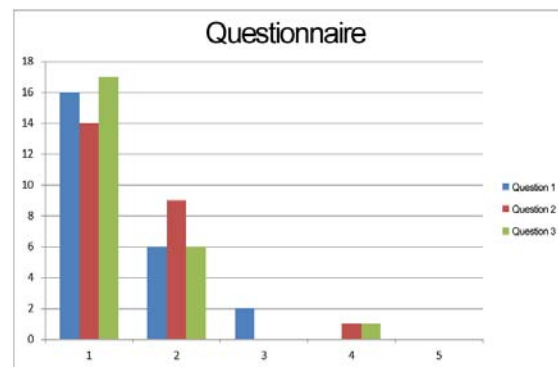


Figure 14. Student's assessment of tasks

In addition to grading, some students also gave a verbal assessment. For example:

Student 1:

1. I really enjoyed the tasks even though I didn't finish some. Evaluation 2.
2. Tasks can help me work better in Excel. Evaluation 1.
3. I find teaching Excel very beneficial. Evaluation 1.

Student 2:

1. It was nice because we had it linked to the information usable in practice and it wasn't somewhat general. Evaluation 1.
2. Tasks helped me get to know Excel better, at least taught us how to use Excel functions that I haven't even known before, and I haven't really known that Excel can do that. Evaluation 1.
3. I find Excel to be beneficial depending on the sector I will work in. Today, in almost every job, employers require employees to have at least a basic knowledge of MS Office programs, and charts that Excel can create can be used in other studies or at work. Evaluation 1.

We can conclude from our research that almost all students managed tasks 1 and 2 without major problems and the remaining tasks on average 19 out of 23 students. It can be assumed that the solution of tasks was important for the development of logical thinking at the level of creating logical conditions, i.e. the ability to create a logical condition within the solution of the task. On the other hand, the tasks also had their motivational level, which visibly influenced students. To assess the motivation level, we used a questionnaire method to find that the tasks were interesting for students. From the results, we can consider it appropriate to include the created tasks into the teaching process, as their solution makes it easier for students to learn to create logical conditions.

5 Conclusion

Logical thinking is an important form of thinking that is needed in the school environment, but it is also necessary to develop logical thinking for the needs of life. Logical thinking is aimed at creating a progressive sequence of thought operations for information processing. This principle of logical thinking is the basis for solving our created tasks. Solving tasks directly

depends on the first step in identifying and classifying the problem. Subsequently, a logical test is created, which depends on the given task. The logical test must meet the clarity of the decision criterion and, at the same time, it must cover all possible cases that may arise in the solution. The difficulty of the tasks gradually increased, but it was possible to use the analogy with the previous task. The "Minesweeper" game was known to students from everyday life, which made it easier to identify the problem in the task and to establish a logical test to create a decision condition. The role of "Hawk-dove" is known from the theory of games and it is important to include it in understanding social and economic systems. To understand its principle, but also for better motivation for this game, students have included it among themselves. After verifying the functionality of the Excel application created, students also can create strategies for multi-round games. Created BlackJack games or chessboard games develop logical thinking, even when creating applications, we could see how students changed their view of these games and strategies when playing these games. All the tasks mentioned and included in the teaching and testing were focused on the logical function "IF", which emphasizes thinking under conditions. This style of thinking under conditions then continues to create a logical test that is characteristic of each task and requires an understanding of the principle of the task. Based on the verification of tasks in the lesson, we may find it appropriate to include these tasks in the teaching process and thus help to develop logical thinking at the secondary school level.

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Primary Paper Section: B

Secondary Paper Section: BA, IN

D EARTH SCIENCES

DA	HYDROLOGY AND LIMNOLOGY
DB	GEOLOGY AND MINERALOGY
DC	SEISMOLOGY, VOLCANOLOGY AND EARTH STRUCTURE
DD	GEOCHEMISTRY
DE	EARTH MAGNETISM, GEODESY, GEOGRAPHY
DF	PEDOLOGY
DG	ATMOSPHERIC SCIENCES, METEOROLOGY
DH	MINING INDUSTRY INCLUDING COAL MINING AND PROCESSING
DI	POLLUTION AND AIR CONTROL
DJ	POLLUTION AND WATER CONTROL
DK	CONTAMINATION AND DECONTAMINATION OF SOIL INCLUDING PESTICIDES
DL	NUCLEAR WASTE, RADIOACTIVE POLLUTION AND CONTROL
DM	SOLID WASTE AND ITS CONTROL, RECYCLING
DN	ENVIRONMENTAL IMPACT ON HEALTH
DO	PROTECTION OF LANDSCAPE

INTERNAL FACTORS OF SARAJEVO HOTEL INDUSTRY

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Abstract: This paper brings new findings about 3 categories of internal factors of hotel industry in Sarajevo: "economic" (management & ethics of the hotel business), "geographic" (location and access) and "architectonic- interior" (facilities and modernity of hotel). All identified factors were measured by 19 parameters incorporated into survey on the Likert matrix model (1-5) and analysed by their statistical relevance. Therefore, the results were classified as "positive", "neutral" and "negative" score, and there was determined the qualitative rank- 3 categories: "high", "medium" and "low" impact of the internal factors on the hotel industry. Terrain observations and visit to sampled hotels (where the survey was conducted) as well as the satellite map analysis were helpful to get the knowledge on the hotel spatial distribution and its quality as well as the work atmosphere at the hotels. The study reflected that all 3 groups of internal factors highly affecting the hotel industry development, while only the human resources- the workforce quality was determined as neutral with the contemporary medium impact on the hospitality. Regarding to new concepts of successful hotel industry, this paper helps to understand the strengths & weaknesses at the Sarajevo hotel sector and it brings solutions for sustainable hotel industry development.

Keywords: hotel industry, ethics, location, facilities, modernity, tourism destination, development

1 Introduction

Sarajevo, Bosnia and Herzegovina, is a European developing tourism destination. The territory of 5 urban municipalities has majority of the tourism receptive contents (accommodation, catering, transport, information, museums and tourist attractions). According to the official statistics, the destination has a positive tourism growth over the two passed decades- the number of overnight stays increased by 9%, reaching approx. 1 million nights in 2017 (925198) with a high participation of international tourists 89%. The hospitality industry of Sarajevo had a gross traffic of 200 million € in 2017 (Development Planning Institute of Sarajevo Canton). Tourism managers claim the real tourism indicators might have a higher value, but there's a statistical leakage at some hotels (e.g. at the registration of overnight stays). There's progressive growth rate at accommodation by 20% because the "blooming tourism" requires the new and modern hotels, such as recently built Novotel Sarajevo Bristol, Hills, Marriot, etc. Sarajevo has 160 accommodation units (2017), while the "hotels" takes 32% (Federal Ministry of Environment and Tourism). Majority of hotels is concentrated at the city zone, while the most beautiful-luxurious hotels are mostly located on the southwest around the thermal waters which is 10-15 km distance from the city centre. Previous research (Zunic, 2018) showed there are some irregularities toward the internal factors affecting the hotels, such as inadequate qualifications, etc. The aim of this article is to analyse and evaluate the internal factors and its relevant parameters which influencing the growth of Sarajevo hotel and hospitality industry.

2 Theoretical Background

Asif (2015) defined internal factors as those within the control of the enterprise, such as: management and the workforce of the hospitality firm, change and conflicts management, types of facilities and activities available, and location & accessibility. The term of internal factors is understood as inner strengths and weaknesses that an organization exhibits. Internal factors can strongly affect how well a company (e.g. hotel) meets its objectives, and they might be seen as strengths if they have a favourable impact on a business, but as weaknesses if they have a deleterious effect on the business (Business Dictionary, Texas). Zhang & Enemark (2016) stated that internal factors are represented by, for example, extent of business investment, level of innovation, costs of workers and firm size. Bernini and Guizzard (2010) stated that internal factors of hospitality are presented with availability of human resources and management.

Langvinienė and Daunoraviciute (2015) presented factors influencing the success in hospitality business model: internal marketing, innovation and technology, empowered employees, customer relationship management and value proposition (Langvinienė, 2015). Generally, the internal factors could be divided into 3 categories: economic (management and workforce), geographic (location) and architectonic (hotel facilities). But, the common thing for determining models of internal factors in hospitality is mostly related to management and human resources of the hotel, which makes fundament of the qualitative hospitality. That's because hotel policy and its implementation mostly depends on the hand which managing all the process and flows inside the object, so it must be the person with an adequate qualifications and impressive business skills. At the same time, one person can't do all alone, so the responsibilities must be shared, but with those who know to work their job. This means that workforce or the staff of hotel need to have property skills to complete their task well. The successful cooperation between the employer and employees is also required. Hotels use seasonal workforce as well, but those should be again carefully chosen to not to decrease the image of the hotel. It's also important that tourism destination can offer human resources with proper qualifications in the field of tourism & hospitality. The geographical approach to the evaluation of hospitality is mostly related to the hotel's location and its accessibility, which is very important to make hotel more attractive on the market. Guests usually choose the hotel which is well connected with the centre and other interesting contents of destination. Hotel should be easily approachable and it's recommended to be located on the flat terrain without heavy slope, which is very important for the older guests and families with young kids. Architectonic side of the hotels is related to its structure and available facilities that makes hotel more desirable. Guests like to enjoy an attractive hotel ambience with imposing interior design, they prefer to choose hotel with contemporary technical equipment (TV, free internet, etc.), more facilities means more fun and creative time spending (fitness, swimming, spa & massage, fun games, etc.), plus they want to feel like at home. Therefore, this paper will consider all 3 groups of internal factors: economic, geographic and architectonic- interior, determined by their suitable parameters as relevant for the evaluation of hotel industry.

3 Methodology

The evaluation model of Sarajevo hotel's internal factors was presented by 3 categories, 4 factors and 19 relevant parameters:

I. Economic/ Business internal factors of hotel:

F1- Management structure and ethics of the hotel business (9)

F2- The Workforce (HR): qualifications and seasonality (4)

II. Geographic internal factors of hotel:

F3- Location and Accessibility: distance to the city centre and connections (3)

III. Architectonic- Interior of hotel:

F4- Available Facilities and Equipment- modernity of hotels (3)

The target population for this study was 25 workers at the 8 lux and superior hotels in Sarajevo. The survey was directly administered and collected during the September of 2018. The importance of each indicator was measured at five-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral/ Neither agree neither disagree, 4 = Agree and 5 = Strongly Agree). The Likert matrix model of evaluation was used to determine parameters' value as: *positive* (5-3.51), *neutral* (3.50-2.51) and *negative* (2.50-1), as well for the ranking of their importance: *high* (equiv. "positive"), *medium* (equiv. "neutral") and *low* (equiv. "negative") impact on the hotel industry. Relevant majority as the "general attitude" was counted if percentage ≥ 60 (Approaches to The Analysis of Survey Data, Statistical Service Centre, The University of Reading, UK, 2001), while the statistical majority was counted 51% (CEO). Descriptive statistics were used to analyse the quality of the internal factors of Sarajevo hotel and hospitality industry, to explore how they influence the growth of this sector and what measures could

improve its development. Terrain observations (the field work) helped to identify spatial distribution and quality of hotel units, but there was also helpful the Google Earth hotel's map- satellite image of Sarajevo city, as well as booking website, to understand the hotel's distance from the city centre, which was measured by 3 categories: <1 km (5), 1-3 km (4), 3-5 km (3).

4 Results and Discussion

4.1 Management Structure and Ethics of the Sarajevo hotels

Based on the contemporary UNWTO criteria (number of rooms: ≤150- small hotel, 151-400- medium, ≥400 rooms- large hotel), 37.5% of lux 5-star and superior 4-star hotels in Sarajevo is medium size, while 62.5% is small hotels. The structure of the Sarajevo hotels is defined with the governmental framework (Federal Ministry of Environment and Tourism, Sarajevo), where the hotel is defined as a functional system presented with one or maximum four buildings or it can be even the part of some other building but with the separate entrance. Hotel can have maximum 3 annexes/ dependences. Hotel essential components are: reception hall, minimum 10 guest rooms, food and beverage, kitchen, and the sanitary node. Qualitative standards for five-star and four-star hotels include specialized personalized service (e.g. luxurious gifts for the guests or hotel room service) and criteria for selection: hotel exterior (e.g. city resort), hotel building construction (unique – for example, historical) and hotel interior (traditional, decorative, comfortable, impressive). Hotel management is hierarchically structured (e.g. general manager as supervisor in charge for all the hotel's operations and then the hotel manager- director, then the head of department, etc.), while the basic operative departments are: reception, reservation and marketing. Educational structure of the hotel workforce counts majority of employees with high school degree 67%, while there's only 10% with the academic degree, but they mostly work at the hotel administration and keep a chief/ head position.

Table 1 Ethical parameters of the hotel business

F1-9	+VE		NEUT.		-VE		Tot. %	Value	Rank
	SA	A	N	D	SD				
The Code of Ethics	80	0	0	0	20	100	4.2	High	
Ethical principles	64	16	8	8	4	100	4.3	High	
Anti-corruption program	28	0	0	0	72	100	2.1	Low	
Salary stimulation	52	20	16	4	8	100	4.0	High	
Freedom of speech	64	24	4	4	4	100	4.4	High	
Fair valuation for all	36	48	12	4	0	100	4.2	High	
Successful cooperation	52	20	16	8	4	100	4.1	High	
Accept. working condition	32	28	24	12	4	100	3.7	High	
Acceptable salary	64	4	12	20	0	100	4.1	High	
TOT. AVG. SCORE							3.9	High	

SA- strongly agree, A- agree, N- neutral, D- disagree, SD- strongly disagree (Zunic & Kadric)

According to the table 1, between 9 evaluated parameters from the group of economic internal factors- Factor 1- Ethics of the hotel, only one has negative value- "low" impact on the hotel industry (Anti-corruption program), while the rest of them has positive- "high" impact, and the average score for the ethical factor of hotels is "high & positive", which means that ethics highly affecting the hotel industry in Sarajevo.

Majority of respondents 80% strongly agreed that the hotel has an international Code of Ethics, while some employees 20% strongly disagreed of that. Based on the results from survey, this answer came from a small number of employees working in superior or even the lux hotels which are actually not member of international chain-brand hotels. However, most of the hotels have an official ethical rules and guidance. For instance, Novotel Sarajevo Bristol- Accor Hotels, this hotel adheres to the FEVAD (Federation of E-commerce and Distance Selling) Code of Ethics. Consequently, there was mostly positive statement 64% that hotel operates on ethical principles. The unexpected thing was that majority of respondents were negative- 72% strongly disagreed that hotel have anti-corruption program, while only 28% marked strongly agree with this. The positive statement was expected as logically the code of business and ethics includes

anti-bribery & corruption program, but majority of employees actually considered it as a separated document which resulted with their negative attitude. Ethics is defined as moral principles that govern a person's behaviour or the conducting of an activity (Oxford). Business ethics are rules by which businesses choose to live (Jaszay, 2002). The term "ethics" can be dissected into components in order to evaluate which aspects are working in hotel and how to improve them. The ethical components would be: individual responsibility; tone at the top; honesty; integrity; corporate responsibility and communication; democracy (Fountain, 2012). For example, ethics of Accor's hotels and integrity is built on the diligent application of three closely related, interconnected principles: heavier penalties, greater public awareness and sensitivity and managerial responsibility. The European Union and national jurisdictions have introduced severe financial penalties, with substantially higher fines for bribery, etc. The business ethics of Accor's hotels includes: respecting competition rules, combatting bribery of public officials, bribery of private individuals, money laundering and complicity in money laundering, gifts, political activities and lobbying (Bazin, 2015). Therefore, the code of ethics automatically regulates the anti-corruption program as well. Employees expressed positive attitude toward their management as majority of them answered with strongly agree or agree to the 3 related issues: 52% of workers strongly agreed and 20% of them agreed that manager stimulate their work; 64% strongly agreed and 24% agreed they have a freedom of speech; 36% gave a strongly agree and 48% agree statement that manager correctly evaluates their efforts. There was relevant majority of employees who stated they get along well: strongly agree 52% and agree 20%. This reflects integrity and good cooperation at hotels which is essential rule of ethics. Fountain (2012) stated that integrity is adherence to a moral code, reflected in honesty and harmony in what one thinks, says and does. As such, those who we regard with high integrity normally possess a strong set of morale ethics. Corporate responsibility is owned by each and every employee (Fountain, 2012). Therefore, the success of hotels means a good organisation and the fact that each employee working in a hotel will contribute to its improvement through the experience they gain. Hotel managers must respect their employees and understand that feedback from employees is important to improve hotel operations and business processes. Rutherford (1998) also stated that people working in a hotel respecting its official rules and legislative procedures (Rutherford, 1998). More than a half respondents confirmed that working conditions are acceptable, 32% of them strongly agreed with it and 28% agreed, while 24% was neutral, 12% disagreed and 4% strongly disagreed. Dissatisfaction mostly has the roots in the fact there are numerous tasks to do (e.g. too much administration) and there should be more employees to make it more efficient, or their difficulties comes from a small workspace (e.g. tight office or desk). During visiting was evident that some hotels have a small working area, for instance, one desk was shared between more than 3 persons, etc. Representative majority of respondents, 64% strongly agree and 40% agree, shared the positive attitude that salary is acceptable, while 20% disagreed and 12% was neutral. Previous results based on the access to the internal hotel's archive (Zunic, 2018), showed that the average salary at hotels is above the average wage in Sarajevo, which confirms it is quite acceptable.

4.2 Qualifications and seasonality at Sarajevo hotels (Workforce- Human Resources)

According to the official data (Bureau for informatics and statistics of Sarajevo Canton, 2016), educational level at hospitality sector was presented with majority of workers with high school degree 67%, while the academic degree participated by only 10%. There was found positive decade trend of growth (2006-2016) in academic degree participation at hospitality industry, but it's still negligible. The educational structure at hotels is somewhat more favourable because workers with academic degree participate by 23%, but the high school degree is still mostly presented- up to 70% (Zunic, 2018).

Table 2 Hotel Workforce- HR parameters

F2-4	+VE		NEUT.		-VE		Tot. %	Value	Rank
	SA	A	N	D	SD				
Hotel operation seasonality	20	28	44	8	0	100	3.6	High	
Seasonal workers	24	24	40	8	4	100	3.6	High	
Academic degree	52	0	0	0	48	100	3.1	Med.	
Educational improvement	24	16	16	28	16	100	3	Med.	
TOF. AV. SCORE							3.3	Med.	

(Zunic & Kadric)

According to the table 2, between 4 evaluated parameters from the group of economic internal factors- Factor 2- Workforce- HR (Human Resources), two of them have positive value- “high” impact (Hotel operation seasonality & Seasonal workers), while the other 2 have neutral value- “medium” impact (Academic degree and Educational improvement), and the average score for the human resources factor at Sarajevo hospitality (hotels) is “medium & neutral”, which means that this factor doesn’t affect particularly the growth of hotel sector.

The survey results showed the relevant majority of hotel workers with academic degree 52%, but it’s also high share of those without diploma 48%. The earlier research (Zunic, 2018) showed the Sarajevo hospitality structure mostly without academic degree. The reason that hotel & tourism industry mostly hires workers with high school degree is because they can do diversify jobs well for less pay (administration, reception, kitchen, housekeeping, etc.). Besides, there are vocational schools that educate and prepare human resources at this field (e.g. High school for catering and tourism Sarajevo) or even the courses- training program (e.g. “tour guide”). On the other hand, people with academic degree should be mostly employed at managing and higher paid positions (e.g. supervisor, director, head of department). However, the new findings at the Sarajevo lux and superior hotels showing different and improved academic structure of workers, which is influenced by 3 factors:

- Popular & internationally branded hotels require qualitative human resources (with academic degree and an adequate qualifications),
- High unemployment rate of 29% in Sarajevo Canton (Bureau for Informatics and Statistics of Sarajevo Canton), and in the country 33% in 2019 (Trading Economics)
- The Capital City as the main gravitational centre of the country

Even jobs at tourism are generally seen as the menial, low paid and seasonal (KIS IGCSE Geography), there are many educated people (with academic degree) in Sarajevo and Bosnia & Herzegovina without job. Therefore, when it comes to surviving, any job is welcomed. It’s not a rare thing in Sarajevo that person with academic degree accept job at the hotel reception or the barman workplace. For instance, many graduated students of tourism & environmental protection (Department of Geography, Faculty of Science, University of Sarajevo) do different lower paid jobs at hotel & tourism sector (receptionist, waiter, seller of arrangements, tour guide, etc.). Sarajevo is also the capital and the leading gravitational centre of the country, so young people are not selective and many of them happily accept any decent job in the “big city”. Even nowadays migrations country-city is extensive in Bosnia & Herzegovina, and at the administrative-inter cantonal level, Sarajevo (FBH) has positive net migration rate of 797 in 2018 (Institute for statistics of Federation of Bosnia & Herzegovina). Majority of immigrants approx. 40% belong to the age contingent of 20-34, while majority of students 46.3% attend studies at the University of Sarajevo. This proves that once the young people come to Sarajevo for higher education, they are hardly willing to back to their earlier place of living which is usually at some province or periphery of the country. Therefore, they accept different jobs here because of higher city life standard. On the other hand, any good businessman knows that the higher educated people have a better trained brain and improved cognitive functions, so they prefer workforce with academic degree. Educated people are considered as more capable to do any job. Besides, there is increased brain efficiency in individuals with higher education

level that may mitigate the impact of age on brain functional connectivity (Marques et al., 2015), so the higher educated people should be more effective in a long-term perspective. International hotel chains have a worldwide recognized name and the quality of their brand is out of question. There is no doubt that the human resources play important role and the academic degree is desirable.

When it comes to educational programs, the answers were mostly negative or neutral especially at the workers with the longer work experience, while 40% of hotel workers expressed positive attitude about this and they confirmed that hotel managers give them opportunity to improve their skills and update their business knowledge. Rutherford (1998) stated that management of contemporary hotel will create a list of attributes that employee should have and it mostly includes: professionalism, affable appearance, empathy, flexibility, formal dressing, special skills (foreign languages, informatics, etc.). Therefore, hotel managers usually make introduction at the initial phase when they have recruited new workers. They give them fast lessons and instructions how to behave and do their task well.

Hotel operation seasonality is more expected at the mountain or the sea tourism centres then in the city centre. However, 48% of hotel workers shared the positive statement that hotel operates better during the tourist season which is defined mostly by interval April-October. Even the city tourism is mostly popular at spring and autumn, there is also huge interest for the summer tourist season because of several reasons:

- Most of people use their annual holiday at summer or some jobs organise collective holidays at summer (schools and universities)
- Many tourists come for a daily visit Sarajevo during their excursion from other destination (e.g. Makarska, Croatia)
- Most of events (conferences, fairs, matches, concerts, etc.) is organised during the warmer and more pleasant period of year which could be defined by April-October

As the tourist season brings overbooking hotels, the 48% of respondents strongly agreed or agreed that hotel recruit seasonal workers and it is mostly connected to the workplace of receptionist. This percentage is a bit higher than the available standards where is recommended proportion of permanent vs. seasonal workers by 60:40% (Expertize of economic development, 2009). However, earlier research (Zunic, 2018) showed that organisation of tasks in front of hotel (supply, marketing and promotion, transfer, accommodation and tourist info) is mostly good 55%, but the guests’ perception was some lower evaluated by share of 45%- good. Therefore, hotels should care more of right qualifications of seasonal workers, but sometimes it’s not required because managers are in rush-hours and they make hasty decisions. Zunic (2018) found nepotism impact on the seasonal worker selection at the hotel and tourism agencies in Sarajevo, where 51% got the job thanks to the manager recommendation without necessary possession of an adequate degree. Dobre (2005) stated that hiring the seasonal workers with lower qualifications significantly- negatively affects the service quality.

4.3 Location and Accessibility: distance to the city centre and connections

Table 3 Hotel Location and Access parameters

F3-3	+VE		NEUT.		-VE		Tot. %	Value	Rank
	SA	A	N	D	SD				
Location & business	84	8	4	4	0	100	4.7	High	
Distance to the city centre	62	25	13	0	0	100	4.5	High	
Transfer organisation	92	0	0	0	8	100	4.7	High	
TOF. AV. SCORE							4.6	High	

(Zunic & Kadric)

According to the table 3, all 3 evaluated parameters from the group of geographic internal factors- Factor 3- Hotel location and access, have positive- “high” value, and the average score

for the hotel location and accessibility factor is “high & positive”.

The survey results showed there’s strong connection between location of hotel and its business success as respondent’ statements were 92% positive. Dobre (2001) stated that hotel location has a huge impact on the hotel business, assortment of services and defining hotel category- class, and it is important factor of business success, growth and development of hotel. Storga (2011) explained that hotel location affecting structure of guests, creating the hotel policy and the hotel operation. The central location has positive impact on the hotel business, while hotels outside the city centre should have more diversify supply to increase their attractiveness. Location is one of the key factors of hotel attractiveness (Grbesa, 2011). When it comes to urban tourism, central location of hotels is highly demanded. Therefore, the majority of respondents 87% gave positive statement that distance of hotel from the city centre matters a lot because guests prefer hotels in the centre near to CBD and to the main tourist sites. There are 4 groups of factors affecting hotel location: spatial, political, cultural and urban-economic (Yang et al., 2012). Spatial location of hotel is defined by locational attributes (access, urban ambient, communal services and infrastructure) and individual characteristics (price of location, hotel class, property and diversify supply), while general (trade-demand, HR, materials, transport, propulsion energy, water) and special factors (climate, land, etc.) affecting hotel location (Dobre, 2001). Geographic approach is related with spatial distribution of hotels depending on geographical factors. Hrelja (2009) analysed spatial factors of hotels location in Sarajevo. He found that topographic and hydrologic feature as well as the transport network had the biggest influence on the hotel location. Therefore, most of hotels are located on the flat terrain or with mild slope (0-4°) with south exposition and near to the main road corridors (which are parallel with the main valleys). Our spatial analysis based on the satellite image of Sarajevo and the terrain work helped us to identify 2 basic cores of city hotel’s location with the grouping distribution: a) Old town and the Centre (E) and b) Ilidza (W-SW), while linear distribution is mostly presented in the inner middle city zone, as well as dispersive character with the increasing radius of distance from centre toward the mountain area. “Grouping hotels” is related to most popular tourist sites such as the Old town- headquarter of Ottoman cultural heritage and the Centre- Austria-Hungarian, while Ilidza is famous with its Roman and Austria-Hungarian expression as well as for the thermal water and spa hotels & parks. “Liner hotels” in the inner city zone are related to the highway- M18 road which is the part of European route E762. “Dispersive hotels” are related to the peripheral area of the city and they are more common for the mountain area especially when it comes to the private accommodation (apartments), while there recently grouping trend hotels at mt. Bjelasnica etc.

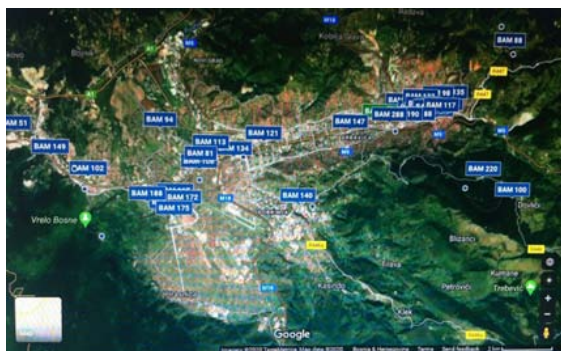


Fig. 1. Satellite image of hotel spatial distribution in Sarajevo (Google Earth Maps)

There was positive statement of 92% that Sarajevo lux and superior hotels organise transfer related to the arrival terminals, but it’s mostly charged. During informal interview with some hotel managers was found that transfer from the hotel to the airport is more common than the transfer to the receptive destination because it costs more. Some hotels organise transfer

from the airport in case there’s group of min. 3-5 guests, while it’s not considered profitable in case of individual arrivals.

4.4 Facilities and equipment- modernity of Sarajevo hotels

Table 4 Hotel’s Facilities parameters

F4-3	+VE		NEUT.		-VE		Tot. %	Value	Rank
	SA	A	N	D	SD				
Modern equipment	40	40	20	0	0	100	4.2	High	
Shuttle buss	64	0	0	0	36	100	3.6	High	
Accommodation quality*	63	37	0	0	0	100	4.8	High	
TOT. AV. SCORE								4.2	High

* the survey results 2013-2014 (Zunic, 2018)
(Zunic & Kadric)

According to the table 4, all 3 evaluated parameters from the group of architectonic internal factors- Factor 4- Hotel’s facilities, have positive- “high” value, and the average score for the hotel’s modernity is “high & positive”.

Majority of respondents 80% gave positive statement about modernity of the hotel. Modern equipment includes: smart room, energy and water saving system, LED technology (TV, bulbs/ lights), internet access, etc., as well as the condition and attractiveness of the furniture and architectonic design of the hotel interior. Lux hotels and most of superior hotels (international ones) have shuttle bus- strongly agree 64%, and this means they have an airport shuttle bus (mostly it’s charged, but some of the top hotels offer it without charge), while hotels can also offer to their guests shuttle bus for the city excursions. Sampled hotels are “popular” hotels because they belong to the lux (5*) and superior (4*) class, and they are often branch of the international hotel chains. Previous research at Sarajevo lux hotels (2019) showed majority of green attributes and innovative technology and modern equipment because prestige hotels care about 3 aspects: guest satisfaction, profitability and environment (Zunic, Bidzan-Gekic, Gekic, 2019). Most of the visited and observed hotels are new date of establishing in Sarajevo and they don’t lag behind European ones. Therefore, it’s not surprising completely positive attitude of hotel workers who strongly agreed 63% and agreed 37% with the hotel’s quality. Considering the average value of 4.8, it is the high rank and at the same time excellent quality of the Sarajevo hotel accommodation. This practically means that lux and superior hotels in the Bosnia capital destination meet the WTO requirements of hotel comfort (space area and design, number of rooms and beds, condition of furniture and sanitary, technical equipment, access, diversified services, etc.).

5 Conclusion

Total average value of measured internal factors is positive which means they have “high” impact on development of the hotel industry in Sarajevo. Economic group was presented by 2 factors: ethics and human resources, while “ethics” was higher evaluated then the hotel’s workforce, which is influenced by the ethical hotel policy that the international hotel-chained brands bring with their establishment. On the other hand, the human resources resulted in neutral value which is counted as “medium” impact on the hospitality. This is contradicted with the successful hotel industry principles and requirements as the hotel’s image highly depends on its workforce quality. However, evaluation model of internal factors of hotel industry in Sarajevo showed the advantage of: ethics, location & access, and hotel facilities. Between total 19 measured parameters of the internal factors, the highest value was found at the location, transfer and the overall accommodation quality. Such results confirmed theoretical postulates that the hotel location is the most important factor of the hotel industry success. The parameters with the lowest value are: anti-corruption program, academic degree of hotel employees and their chances for educational improvement. All 3 parameters with their “neutral to negative” value are strongly connected and they directly imply presence of nepotism in this branch. Theoretical findings teach us that the success of contemporary hotel industry is highly depended on the empowered workforce because the guest’ satisfaction is

determined by the affability of the hotel workers. Therefore, it's important that successful destination and hotels particularly, as they present fundament of cultural receptive factors of destination, implement GRM- Guest Relationship Management as it's recommended like 1 of 3 main objectives when it comes to managing tourism destination (WTO). As the hotel density is high at the main cultural & tourism sites of Sarajevo, the key of their competitiveness could be found in an adequate workforce. Sarajevo has been recognized necessary for the tourism qualifications, so there's 2 tourism study programmes implemented lately- for instance, study of Tourism & Environmental protection at Department of Geography, Faculty of Science, University of Sarajevo (since 2005) and Tourism joint studies at Faculty of Economics and Business, University of Sarajevo and Faculty of Tourism & Hospitality Management, University of Rijeka (2018). The further Sarajevo hotel industry development should focus on transparent public competition programs with the aim to select and choose only employees with an adequate diploma in the field of tourism and hospitality. Hotel sector should leave the nepotism practice if they want to get positive feedback and recognizable image at the tourism networks. The guest' satisfaction is the guaranty that the hotel will get free marketing as visitors share their experience by their "word of mouth" or through the internet and media. Therefore, hotels with affable staff get the best rating and they are pleasantly recommended. Hoteliers should also show better care about working conditions by setting the wider work space with more comfort (acceptable size of reception, work desk, office proportional with the number of people who share the work area). This is ethical matter and its helpful at the building up the worker's will to finish their task efficiently. It's also important to support and improve educational structure of the hotel employees especially when it comes to the hospitality culture and their language skills. Hotels with higher educated workers who speaks several languages and respecting the rules of successful hospitality ("to be polite, empathic, helpful and effective") show their prestige. Boosting the human resources at the hotel industry should increase the interest in Sarajevo tourism destination as the human factor gives a soul to the place it represents. The spiritual experience of the visitors begins from the first point they reach at the tourism destination which is the hotel they will stay.

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Primary Paper Section: D

Secondary Paper Section: DE, AE, AH, AL

G AGRICULTURE

GA	AGRICULTURAL ECONOMICS
GB	AGRICULTURAL MACHINES AND CONSTRUCTION
GC	PLANT GROWING, CROP ROTATION
GD	FERTILIZATION, IRRIGATION, SOIL TREATMENT
GE	PLANT CULTIVATION
GF	DISEASES, PESTS, WEEDS AND PLANT PROTECTION
GG	ZOOTECHNICS
GH	NUTRITION OF FARM ANIMALS
GI	FARM ANIMAL BREEDING AND FARM ANIMAL PEDIGREE
GJ	BDISEDAISES AND ANIMAL VERMIN, VETERINARY MEDICINE
GK	FORESTRY
GL	FISHERY
GM	FOOD INDUSTRY

SYSTEMATIC SPRAYING OF CATTLE WITH DELCID AGAINST BLOODSUCKING MIDGES ON PASTURES

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Abstract: The effect of spraying cattle hair with Delcid on the number of midges was studied. The attack of bloodsucking midges decreases the milk productivity of cattle. According to literature data, losses can range from 5.19 to 53.4%. In Russia, synthetic pyrethroids are widely used to protect livestock from midges. Among the drugs in this group, Delcid (4% emulsifiable deltamethrin concentrate) has proven itself effective. The present research aimed to study the effect of spraying cattle hair with Delcid on the number of midges on pastures and the milk productivity of cows. Studies were conducted in livestock farms in the south of the Tyumen region in 2003–2005 and 2008. Cows before pasture were sprayed with 0.001% (by active substance) Delcid water emulsion in medium volume (0.5 l per animal) using the universal horizontal single-pipe spraying booms installed at the pen gate and developed at the All-Russian Scientific Research Institute of Veterinary Entomology and Arachnology. Midges were counted using an entomological net with removable sacks. The entomological efficiency of treatments was assessed by comparing the number of midges at the test and control pastures. Losses in milk productivity were calculated based on the "Method for determining the harmfulness of insects of the 'gnat' type for cattle" developed by the authors of the present research. The research revealed that the loss of milk productivity of cows in the south of the Tyumen region can reach 9.88% in some years. Systematic spraying of the hair of grazing cattle with a 0.001% aqueous Delcid emulsion reduced the total number of midges on the pasture by a factor of 1.7-7 and, accordingly, shortened the period of their mass swarming. This allowed getting additional 0,231 l of milk per day or 1.45% from each cow, thus increasing the profitability of cattle breeding.

Keywords: bloodsucking midges, cattle, Delcid, entomological efficiency, milk productivity, pasture, spraying.

1 Introduction

Bloodsucking midges (Diptera, Simuliidae), being ectoparasites and carrying pathogens of many infectious and invasive diseases, cause significant economic damage to animal husbandry. Simuliidae are widespread in all landscape-geographical zones of the Russian Federation. Development of animal husbandry and increase in milk and meat productivity largely depend on the timely and high-quality veterinary measures. One of such measures for increasing the profitability of livestock is prevention of invasive diseases, including entomoses, and protection of animals from bloodsucking dipterous insects: horseflies, mosquitoes, black flies and biting midges commonly known as gnat. For instance, midges attacks reduce milk productivity of animals in the south of the Tyumen Region by 5.19% [1], and in the Irkutsk Region by 53.4% [2]. In Australia, midges reduce milk productivity by 15% [3]. In Canada in some years, the loss of meat and milk amounts to hundreds of thousands of dollars [4].

Currently, protective spraying of animal hair with emulsions of insecticides from the group of synthetic pyrethroids, which turned out to be the most effective and promising, is recommended. One of these domestically produced drugs is Delcid, a 4% emulsifiable deltamethrin concentrate developed at the LLC 'Agrovetzashchita – Animal Health', Russia. In the

recommended amounts [5, 6], the residual insecticidal effect of this drug on hair (with the efficiency higher than 84% against horseflies as the most stable components of the gnat) remains for 2-3 days in the conditions of grazing. Spraying with Delcid not only protects animals directly but also reduces the number of horseflies on pastures 6 times in average [5] and that of mosquitoes 2.6-2.9 times [5, 7]; no such data was identified on midges. Deltamethrin-based preparations are used worldwide due to their valuable insecticidal activity against pests and parasites. With the increasing use of deltamethrin, its toxic effects on animals and humans attract a lot of attention; however, neither Russian, nor foreign literary sources provide a complete picture of the studies on Delcid toxic effects on bloodsucking midges. Foreign studies mostly focus on the effect of deltamethrin (caused by pyrethroids) on mosquitoes (Diptera: Culicidae) as they pose a danger to humans and animals; it is also believed that pyrethroid insecticides are less toxic to mammals [8-16]. Measures against gnat and especially against bloodsucking midges (Diptera: Simuliidae) are more relevant today in connection with the purchase of cattle from Western Europe for many areas of Russia.

The present research aims at studying the effect spraying cattle hair with Delcid has on the number of midges on pastures and the milk productivity of cows.

2 Materials and methods

The Tyumen Region is characterized by a pronounced latitudinal zonality.

The work was carried out in the laboratory of entomology and pest control of the All-Russian scientific research institute of veterinary entomology and arachnology – Branch of Federal State Budgetary Institution of Science of the Federal Research Center of Tyumen Scientific Center of the Siberian Branch of the Russian Academy of Sciences, as well as in field in all the three climatic zones.

Studies were carried out in the south of the Tyumen region in the JSC 'Bolshevik' of the Nizhnetavdinsky district (southern taiga) in 2003-2005 and in the JSC 'Chaika' of the Yalutorovskiy district (subzone of deciduous aspen-birch forests) in 2008.

Spraying was carried out in accordance with the "Methodological guidelines ..." [17] and instructions [7] with 0.001% (by active ingredient) aqueous Delcid emulsion in medium volume (0.5 l per animal) when the cattle was lead out to pasture after the morning milking with universal horizontal spraying booms [18] and universal horizontal single-pipe spraying booms [19-21] installed in the pen gate. Delcid is an insecticide-acaricide drug in the form of emulsion concentrate for external use, designed against animal ectoparasites and Acari, and for pest control of livestock buildings. Its active substance is the synthetic pyrethroid deltamethrin (4.0%) and its auxiliary components are tween 80, nonoxynol and petroleum solvent. Delcid is oily transparent liquid coloured from yellow to brown; when mixed with water, it forms stable white emulsion.

In the Nizhnetavdinsky district, studies were carried out on the same test and control pastures. In 2003-2004 on the test pasture (summer camp 'Dachi'), 300-350 cows of the two herds of the Nizhnetavdinsky farm were sprayed with Delcid 30 and 16 times during the season, respectively. In 2005, these animals grazed on another site – the adjacent pasture 'Lipnyaki', located 3 km away. On the control pasture 'Yermachiha', 170-250 cows of two herds of the private sector of Nizhnyaya Tavda village were not subjected to treatment, since it is located more than 8 km away from the test pasture.

In 2008 in the Yalutorovskiy district (LLC 'Chaika' in the village of Kiev), 200 cows began grazing on July 7; previously, they were kept without grazing in a pen near the livestock

building. From July 9 to July 25, the animals were treated with the same preparation 6 times. The control pasture for 100 cows of the private sector was located 5 km from the test pasture, and these animals were not subjected to treatment.

On the test and control farms and pastures of the forest type, surveys were carried out of the number of attacking midges by trapping them with an entomological net with removable sacks. The average data for 10 sweeps in 10 replications was taken as a standard unit [22]. The midges were counted twice a decade between 7 and 8 p.m.

The entomological effectiveness of spraying cows with Delcid was evaluated according to the results of a comparative survey of the number of midges on the test and control pastures according to the "Methodological recommendations ..." [23].

Loss of milk productivity was estimated based on the harmful number of midges expressed in conventional units (cu) and on loss of productivity of 1 cu. [24].

3 Results

The study of seasonal dynamics revealed the swarming period of midges in the Nizhnetavdinsky district begins in the end of May till the beginning of June and lasts up to the first decade of August (70-75 days). The number of midges on the test pasture remained at a lower level during the spraying seasons than on the control pasture. In 2003 on the test pasture, it averaged 33.1 specimens per season, while on the control pasture it was 84.6 specimens; in 2004, the numbers were 21.6 and 23.8, respectively. In 2005 (when the test cattle grazed on the adjacent test pasture 'Lipnyaki') the number of midge on the control pasture 'Yermachikha' averaged to 35.6 for the season, on the test pasture 'Dachi' – 97.5, and on the pasture 'Lipnyaki' – 88.6 specimens. The number of midges on the pasture 'Dachi' was close to that of 'Lipnyaki' where cattle grazed; thus, to calculate the effect of spraying on the number of midges, the 2005 season was used as a control period.

According to the calculations, the number of midges on the test pasture 'Dachi' in 2003 compared with the control pasture 'Yermachikha' (taking into account the number of midges on these pastures in the control year of 2005) decreased by 85.7%, and in 2004 by 66.9% or, respectively, 7 and 3 times.

The expected loss of milk productivity was calculated based on the average number of midges during the mass swarming. In 2003 (according to the economic abundance threshold of 0.8 cu – 57 individuals on a one-time record), the mass swarming of midges on the control pasture lasted from the middle of the first decade to the end of June (25 days). During this period, the average number of midges was 190; this corresponds to the harmful number of 2.67 cu at which the expected loss of milk productivity averaged 9.88%. On the experimental pasture (where cows were treated with Delcid), the mass swarming period lasted from the second to the fifth five-day period of June (20 days). The average number of midges during this period was 74.3 individuals or 1.04 cu at which the loss of milk productivity was 3.85%. With average daily milk yield in June being 12.96 l, each cow in the control group lost 1.28 l per day (32 l in total during the 25 days of the mass swarming), and each cow in the test group lost 0.5 l per day (10 l in total during the 20 days of the mass swarming).

Thus, the protection of livestock from midges with Delcid allowed saving 22 l of milk for each cow (7,634 l for 637 cows in total) since both the number of midges and the period of the mass swarming were shortened.

In 2004, the mass swarming was observed on the control pasture only at the beginning of the third decade of June and at the end of July (10 days) with an average number of 63.2 specimens or 0.88 cu registered. The estimated loss in productivity of cows during these days amounted to 3.2%, which slightly exceeds the economic threshold. In fact, midges had no economic value as a gnat component.

On the experimental pasture, the mass swarming of midges was observed only at the beginning of the second decade of June (5 days) with 70.9 specimen or 0.99 cu on average; the expected loss of milk was 3.66%. With average daily milk yield of 13.03 l, on the control pasture, each cow lost 0.417 l per day (4.17 l for 10 days of mass swarming), and on the test pasture, the figures were 0.474 l per day (2.385 l for 5 days, 1.785 l less than on the control pasture). Thus, with almost equal numbers, spraying shortened the mass swarming period and thus saved 598 l of milk from 335 cows, against 7634 liters in 2003. The significantly lower estimated economic effect of spraying in 2004 can be explained by the low number of midges (and of gnat in general) in the given season. The average number of midges per season did not reach the economic threshold, and slightly exceeded it only for 10 days (control) and 5 days (test).

In 2008 in the Yalutorovsky district, the swarming on the control pasture with continuous grazing of cows lasted from the second decade of June to the end of August (more than 2.5 months). Mass swarming lasted from the middle of the third decade of June to the first decade of July (15 days) with 88.6 specimens per account on average. The average number of midges per season was 50.7 specimens or 0.71 cu which is below the economic threshold. The expected loss of milk productivity with this number was 2.63% (Table 1).

Table 1: The number of midges before and during the spraying of grazing cows on test and control pastures (the Yalutorovsky district, 2008)

Account periods and dates	Number of midges per account	
	Test pasture	Control pasture
Before spraying: 24.06 30.06 4.07 On average	49.7	32.4
	114.6	97.5
	65.6	99.6
	86.6	76.6
During spraying: 9.07 16.07 23.07 On average	31.8	63.1
	21.5	45.0
	27.6	14.5
	27.0	40.9
Entomological efficiency, %	41.6	-

On the test pasture, the mass swarming was observed in the last five days of June and the first five days of July (10 days), with an average number of 105 specimens per account. The average number of midges per season was 49 specimens or 0.68 cu, at which the expected loss of milk was 2.5%. Grazing on this pasture began on July 7th; from July 9 to July 25, the animals were sprayed six times. To estimate the impact of spraying on the number of midges, indicators before and during treatment on both pastures were used [19]. Before treatment on the test pasture, the number of midges was 86.6, and during treatment it was 27.0 specimens per account; on the control pasture, the numbers were 76.6 and 40.9, respectively. The calculations show that the entomological efficiency was 41.65%; in other words, spraying the grazing cows with Delcid reduced the number of midges 1.7 times.

To compare the milk productivity of the test and the control herds, the following data were used:

- the milk yield of LLC 'Chaika' in 2008, when the animals were kept in the pen during the first half of the mass swarming of midges (June 16 - July 6), and when the animals grazed daily and were periodically treated during the second half of the mass swarming (July 7 - July 25);

- the milk yield of the same farm in 2007 (the control season), when the animals grazed daily without treatments.

In the control period before treatment, the average daily milk yield of cows was 16.126 ± 0.023 l in the test herd and 15.978 ± 0.135 l in the control herd. In the test period the numbers were 14.923 ± 0.211 and 13.437 ± 0.128 l, respectively. Therefore, milk yields decreased in both herds. Calculations according to the methodological recommendations [19] showed that spraying animals with Delcid to protect them from gnat resulted in an additional 1,362 l or 10.04% from each cow. (Additional productivity = $14.923 - 16.126$ ($13.437/15.978$) = 1.362 l; $E = 100$ [$(14.963/16.126) \cdot (15.978/13.437) - 100 = 10.04\%$). Based on the fact that in 2008, average seasonal harmful numbers of midges were 0.71 cu or 17% of 4.17 cu of gnat, spraying the animals saved 0.231 l or 1.45% of milk per day from each cow, and 877.8 l of milk from 200 cows for the test period (19 days).

In comparison with expected losses (2.63%), calculated based on the harmful number of midges, spraying with Delcid prevented losses by 1.45% or more than half of the expected.

4 Discussion

The natural conditions of the south of the Tyumen Region favor the mass emergence of bloodsucking dipterous insects of the 'gnat' type; they are widespread and cause significant damage to agriculture.

Experiments (under productivity conditions) to study the effect of spraying animals with water emulsions of synthetic pyrethroids preparations on the number of midges on pastures revealed that (compared to control) in the southern taiga subzone in 2003, 30-fold spraying of 300 cows with 0.001% Delcid emulsion reduced the number of midges by 84.75% (more than 6.5 times), and in 2004, 16-fold spraying of the same livestock reduced the number of midges by 69.78% (3.3 times).

The productivity experiment in the subzone of aspen-birch forests in 2008 was unique since the animals were sprayed with the newly designed universal horizontal single-pipe spraying booms developed at All-Russian scientific research institute of veterinary entomology and arachnology, and since during the first half of the mass swarming of gnat, the cows were kept in a farm pen. Grazing began only on July 7, and for the remaining period of the mass swarming (until July 23), the animals were sprayed six times. On the animals in the pen, there were practically no midges, and protection from them was not required. As a result of spraying animals before grazing, the number of midges on the test pasture decreased by 41.6% or 1.7 times.

Thus, when animals were sprayed with a 0.001% Delcid aqueous emulsion, the entomological efficiency varied from 41.6 to 84.75% and depended directly on the number of treatments. In addition, the entomological efficiency of spraying animals against midges was higher than against horseflies and mosquitoes, which can be explained by their greater contact with treated animal hair, that is, the nature of their attack for blood sucking (Rubtsov, 1962).

In the experiments of V.U. Mitrokhin (1975) as a result of spraying cattle with a 3% aqueous emulsion of hexamidum during the mass swarm of midges, 0.41 l or 5.36% of milk was saved in the total milk yield of cows.

5 Conclusion

Systematic medium-volume spraying of the hair of grazing cattle with a 0.001% aqueous Delcid emulsion against gnat, including bloodsucking midges, provides not only immediate protection but also reduces the total number of midges 1.7-7 times and shortens the period of their mass parasitic activity which requires treatment. The harmful number of midges (expressed in conventional units) makes the expected loss of milk productivity reach 9.88% in some years on the southern taiga pastures in the Tyumen region, and 2.63% on pastures of aspen-birch forests

with the mass parasitic activity period of 25 and 15 days respectively. Spraying cows with a 0.001% aqueous emulsion of Delcid allowed obtaining additional 0.231 l of milk per day (1.45% from each cow) which reduces the losses from the attacks of these insects by more than half.

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Primary Paper Section: G

Secondary Paper Section: GJ

I INFORMATICS

IN INFORMATICS

FINDING CORRELATION BETWEEN CUSTOMER TYPOLOGY AND SALES RESULTS IN ASSISTED RETAIL USING COMPUTER VISION

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Abstract: We use computer vision capabilities to detect several basic attributes reliably recognizable from an image. We also analyze sales data to compare the connection between these data. The results are evaluated on a small sample by a human, and then everything is applied to a large set of data. The purpose of this comparison is to find a correlation with better (worse) sales results with collected data. This can be used to improve the planning of sales capacities, sales plans and other important indicators for retail store management. The article is narrowly focused on assisted retail in telecommunication business. For age and gender detection, the Cortana Analytics Suite from the Microsoft Azure platform is used. For other image recognition problems, custom algorithms have been created. All this has led to the creation of a tool usable for anyone who wants to understand better who his customers in retail are.

Keywords: computer vision, retail, sales, footfall, azure

1 Introduction

The goal of computer vision is not only to see the image, but rather to get information from it (Szeliski, 2010). Such information, in the field of assisted retail (all customers are served by a human), is mainly the number of customers who have entered the store. This information is the basic pillar for calculating the main performance indicator of a given store – the Conversion Rate (Marketos and Theodoridis, 2006). In addition to this basic indicator, other information such as gender, age, color of clothing and entrance as a group ("family"), can be easily read. There are a lot of other parameters that can affect customer buying behavior, such as customer mood and walking speed. We are looking for methods of getting information about incoming customers and looking for correlations between the above attributes and sales data.

As Deshwal (2016) writes, there is high correlation in buying willingness differentiated by gender, age and other factors that cannot be detected by computer vision such as family income and education level. This research was done on companies that provide similar service to telecommunications services, with a high focus on maintaining a long-term relationship with customers. According to Roy Dholakia (1999) and Bakewell (2006), motivation for going shopping is connected with customers' mood, in particular cases. There is a difference between have-to-go shopping and want-to-go shopping. This mood can be represented with body poses, facial expressions and colors of clothing. We have neutral colors, negative colors and positive colors (Alanazi, 2018). Which color is positive and negative differs by region and culture. Green is connected with nature and fertility in Western Europe, while in Indonesia it is a forbidden color and in China it can mean cheating one's spouse in a sexual way (Scott-Kemmis, 2018). In this article, we want to find a correlation with sales in a manner independent of positive or negative colors. The hypothesis of this article is that this computer vision can be used to optimize sales planning in retail with the abovementioned factors influencing sales results.

The acquired image and structured data are anonymous and are provided with the consent of the store management. Image data are available for performing recognition. A camera placed above the store entrance takes this data. We also have data on customer requirements / sales and their time of those requests. These requirements are of two types. These are service transactions, such as when a customer claims goods or services or requests changes in services, etc. These are requirements that will not make any profit for companies. We also have sales transactions. The customer purchases a new product, a service, or changes the setting of existing services, but generally, such a transaction brings profit to companies. The number of customers does not match the number of transactions executed. Customers can go to the store only to get information or view the exhibited products. Vice versa, it is possible to observe more than one transaction per customer.

Data from the image and sales information cannot be linked – due to a lack of a common identifier. Therefore, data is divided into time blocks and only numbers in these blocks are compared.

The data obtained from the image is verified in a small section by the human eye, in order to determine the error rate of the methods used. Even this sort of verification is not unambiguous; it is difficult to determine the frontier classification in the age category.

2 Materials and Methods

2.1 Group Size Recognition

The input image for group size recognition is a snapshot from the camera system above the queue management system kiosk, created a few seconds after sending a request for a ticket. Detection is performed by comparing the difference between an image without customers and an input image (one example of group detection is in Figure 1, and an example of one customer detection is in Figure 2) (Piccardi, 2004). Image differencing is a common image processing technique used to determine changes between images. The basic prerequisite for a correct evaluation is that near this kiosk, queues of unrelated customers do not form; however, if more people are detected at a small distance from each other, it is really a group of customers who have come together.

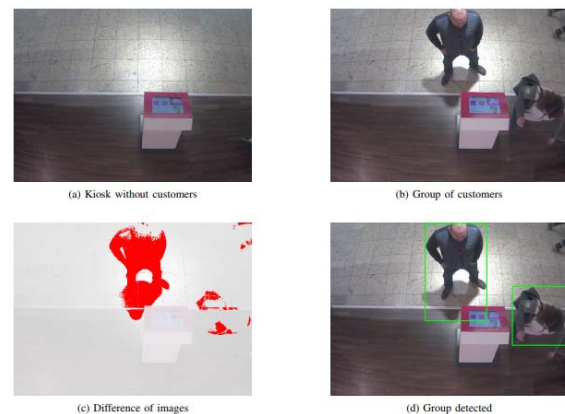


Fig. 1: Example of group detection during group size recognition

The field of view of the camera is not large enough for a greater group of people, and therefore, in the next evaluation of the collected data, we only consider the group flag where the True value corresponds to a group of two or more people, and the False value means only one customer.

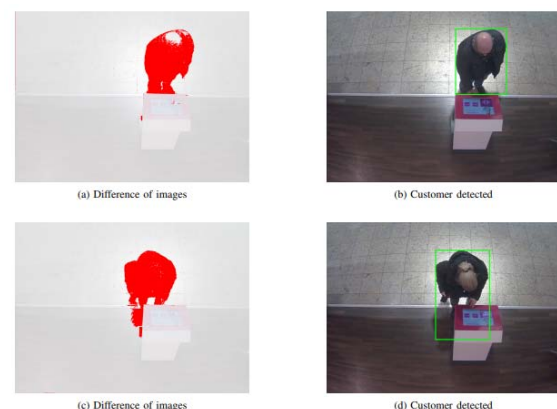


Fig. 2: Example of customer detection during group size recognition

2.2 Gender and Age Recognition

The input image for gender and age recognition is a snapshot from the camera system which is pointing directly towards the entrance to a retail outlet. Face detection and subsequent gender and age estimation are done through machine learning, specifically by using the Cortana Analytics Suite from the Microsoft Azure cloud computing platform (URL: <https://azure.microsoft.com/cs-cz/>).

The Face API of Microsoft Azure can extract facial landmarks from photographs, such as the locations of the pupils, eye corners, eyebrow edges, nose tip and lip boundaries. By comparing those points with AI learning models, this cloud service can estimate age based on data about how facial landmarks tend to shift and change with aging and gender based on data about what differences of facial landmarks there are between male and female.

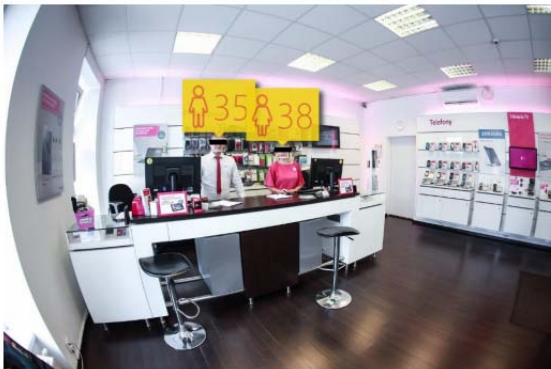


Fig. 3: Example of gender and age detection

Due to the anonymization of customers, the example in Figure 3 is only meant for illustration, being the image output of the HowOldRobot application (URL: <https://www.how-old.net/>), which serves as a demonstration of the Cortana Analytics Suite capabilities. The output of the Cortana Analytics Suite itself contains the following JSON data:

```
[{"face": {"age": 34.5, "gender": "Male"}, {"face": {"age": 38.0, "gender": "Female"}}]
```

In this particular case, the age estimation error is a few years compared to reality. Because we assume a fairly high error rate for all the input images, in the further evaluation of the collected data, we consider grouping the estimated age into five categories: 0–17 years, 18–26 years, 27–40 years, 41–60 years and 61+ years.

2.3 Color Recognition of Clothes

The input image for the color recognition of clothes is a snapshot from a camera system, observing the horizontal movement towards a retail outlet. In order to detect the color of the clothes in a way that isn't affected by the hair or the shadow of the customer, it is necessary to crop the input image from the bottom and top by a certain percentage of the height of the detected figure, for example, by 20%. We need to extract, from the resulting image, a palette of predefined colors according to their similarity to the colors in the image (Comaniciu and Meer, 1997). Because the floor of the outlet is gray, we also have to neglect this color if it isn't the dominant color on the image. In this case, there is a high probability that the customer has clothing colored similarly to the floor color. The pair of examples is in Figure 4.

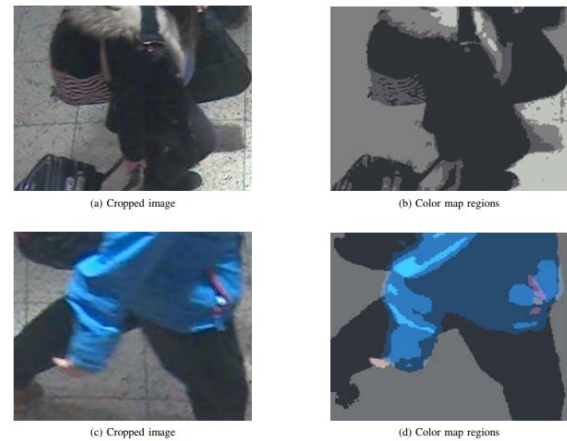


Fig. 4: Example of color detection of an incoming customer's clothes

In some cases, it is possible to subtract the background of the image, which is the floor, by algorithms for background-subtracting; for example, using frame differencing (Singla, 2014), and then not considering the background in color recognition. This method has only a 27% success rate in the image set due to inappropriate lighting conditions. The pair of examples with successful background subtraction is in Figure 5.



Fig. 5: Example of color detection of incoming customer's clothes

The output of this detection is the set of colors and the corresponding percentage of their representation in the color map of the processed image. In the case of the last two examples, it's the following data in the JSON format:

```
[{"clothes": {"Grey": 71.8, "Blue": 28.2}, {"clothes": {"Black": 85.1, "Red": 9.8, "Grey": 5.1}}]
```

2.4 Output Information about Customer

After performing the above-described image recognition operations on camera images, each customer is provided with a list of properties in the following JSON format:

```
[{"customer": {"group": Boolean, "face": Array.of(Object), "clothes": Array.of(Object)}}]
```

3 Results

The data was collected at 3 stores in one month, only on working days in the opening hours, between 9am and 9pm.

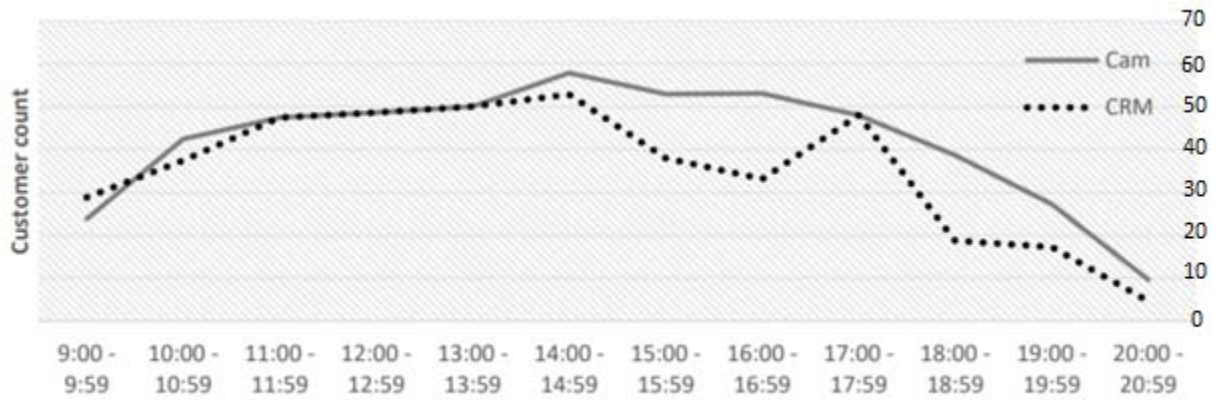


Fig. 6: Correlation between customer count gained by cameras and CRM data

The number of customers counted using cameras has been compared with the number of customers served by CRM (customer relationship management) systems. The number of customers is a correlation confirming the correctness of the methods used. The mathematical definition of correlation says that it is the degree to which two or more quantities are linearly associated. In a two-dimensional plot, the degree of correlation between the values on the two axes is quantified by the so-called correlation coefficient (Spiegel, 1992). For the purposes of this article, it is simplified to two directional curves. One is for CRM data and the second is for data extracted from the image. When the direction of the first curve is the same as the direction of the second curve, we call it correlation (increasing maximization vs. decreasing minimization). These curves are separated into hour-long blocks of time in which we look for those correlations. The deviations visible in the graph (Figure 6) are due to the arrival of groups, when only one person in the group is actually served in the CRM systems.

The data is grouped into hour-long blocks within which the maxima and minima (curve directions) are found, which can be used to determine that at a given time, more persons meeting those parameters have visited the store, and further notice, whether or not sales have been diverted at that time, up or down. Table I shows the distribution of the conversion rate over time and the distribution of traffic over time by the total number of units on the one-hour clock. This is the baseline for each of the further searches.

Tab. I.: Conversion rate and footfall according to time

Hour	Conversion rate	Footfall
9:00 – 9:59	0.08	0.05
10:00 – 10:59	0.02	0.09
11:00 – 11:59	0.03	0.09
12:00 – 12:59	0.05	0.09
13:00 – 13:59	0.03	0.10
14:00 – 14:59	0.22	0.13
15:00 – 15:59	0.17	0.10
16:00 – 16:59	0.06	0.11
17:00 – 17:59	0.15	0.09
18:00 – 18:59	0.07	0.08
19:00 – 19:59	0.07	0.06
20:00 – 20:59	0.22	0.01

Another output is the number of customers by gender. No data is available to verify the sex of the incoming customer other than the cameras. The data was verified by a brief observation of a man in parallel with the computer data, and the resulting deviation was assessed as negligible. The ratio of incoming customers by gender is shown in Table II. The percentages shown are from the total number of incoming customers.

Tab. II.: Incoming customers by gender and groups

Hour	Solo	Group	Female	Male
9:00 – 9:59	61%	39%	64%	36%
10:00 – 10:59	62%	38%	59%	41%
11:00 – 11:59	62%	38%	60%	40%
12:00 – 12:59	62%	38%	58%	42%
13:00 – 13:59	61%	39%	60%	40%
14:00 – 14:59	62%	38%	58%	42%
15:00 – 15:59	62%	38%	60%	40%
16:00 – 16:59	62%	38%	58%	42%
17:00 – 17:59	63%	37%	59%	41%
18:00 – 18:59	61%	39%	60%	40%
19:00 – 19:59	61%	39%	59%	41%
20:00 – 20:59	67%	33%	57%	43%

Table II also shows the arrival of customers in groups. The methods used were equally validated by observation. Unfortunately, this error rate is significantly greater. Groups do not always come to the shop together, but sometimes at different hours. However, it is true that a larger proportion of customers arrive alone and the resulting ratio, despite the inaccurate input data, is accurate.

The methods used make it possible to determine the age as an exact number. This information has been generalized and customers have been grouped. Customer arrivals by age are shown in Table III.

Tab. III.: Incoming customers by age

Hour	0–17	18–26	27–40	41–60	61+
9:00 – 9:59	11%	39%	28%	13%	8%
10:00 – 10:59	9%	39%	31%	12%	9%
11:00 – 11:59	10%	40%	30%	12%	7%
12:00 – 12:59	10%	39%	27%	14%	10%
13:00 – 13:59	10%	40%	29%	13%	9%
14:00 – 14:59	11%	39%	29%	13%	8%
15:00 – 15:59	12%	41%	28%	11%	8%
16:00 – 16:59	9%	42%	28%	12%	8%
17:00 – 17:59	11%	40%	28%	12%	9%
18:00 – 18:59	9%	42%	29%	12%	8%
19:00 – 19:59	11%	41%	27%	11%	9%
20:00 – 20:59	14%	39%	30%	6%	11%

The breakdown of customers in Table III by age was verified by a brief observation. Deviations due to grouping are negligible and these data are accurate.

The methods used provide information about all the customers' clothing colors. Only one dominant color was used for the evaluation. The color distribution is shown in Table IV. Colors

other than black, brown, blue, grey and pink are omitted because it is impossible to group these colors together.

Tab. IV: Incoming customers by dominant color of clothes

Hour	Black	Brown	Blue	Grey	Pink	Other
9:00 – 9:59	26%	8%	12%	33%	3%	18%
10:00 – 10:59	31%	8%	11%	39%	6%	5%
11:00 – 11:59	25%	8%	12%	34%	5%	16%
12:00 – 12:59	31%	8%	12%	36%	5%	8%
13:00 – 13:59	27%	8%	13%	38%	5%	9%
14:00 – 14:59	25%	8%	12%	34%	5%	16%
15:00 – 15:59	26%	9%	12%	36%	4%	13%
16:00 – 16:59	26%	7%	11%	35%	4%	17%
17:00 – 17:59	29%	9%	12%	39%	5%	6%
18:00 – 18:59	31%	8%	12%	39%	5%	5%
19:00 – 19:59	25%	9%	13%	36%	3%	14%
20:00 – 20:59	32%	8%	8%	34%	4%	14%

3.1 Correlations

In addition, the maximum and minimum is searched for in each group. If a maximum or minimum is found, it is then compared with the conversion rate. If the conversion rate is smaller at that point or larger than the average, this is considered a correlation. These are divided into two types. The first is the correlation where the entire group only increases or decreases over all time blocks. The second is partial; here a time block is found where it decreases within the group, but a different time block with an increase is also found. All these correlations are shown in Table V.

Tab. V.: Correlations list

Group	Value	Correlation	Business	Hour	Hour
Solo/group	solo	partial	decrease	19:00:00	19:59
Solo/group	solo	partial	increase	20:00:00	20:59
Gender	male	partial	decrease	9:00:00	9:59
Gender	male	partial	increase	20:00:00	20:59
Age	0–17	partial	decrease	18:00:00	18:59
Age	0–17	partial	increase	20:00:00	20:59
Age	18–26	full	decrease	-	-
Age	27–40	full	decrease	-	-
Age	61+	partial	decrease	11:00:00	11:59
Age	61+	partial	increase	20:00:00	20:59
Color	Black	partial	decrease	19:00:00	19:59
Color	Black	partial	increase	20:00:00	20:59
Color	Brown	full	decrease	-	-
Color	Grey	full	decrease	-	-
Color	Pink	partial	increase	14:00:00	14:59
Color	Pink	partial	decrease	19:00:00	19:59

4 Discussion and Conclusion

From the collected data, conclusions can be made. The data was collected over a period of twenty working days within one month (11/2018). As can be seen in Table VI, the total number of records is nearly thirty thousand. Records containing unsold transactions were neglected.

Tab. VI.: Data summary

Type	Count of type
cam	18828
sale	1739
care	8275
total	28842

Most of the correlations found are only partial, i.e., they are valid in a specific part of the day but are not general. For this reason, it is advisable to generalize the time divisions with a granularity of

three. This is by four hours (morning, afternoon, evening). Then we can make conclusions in these blocks. Another factor that undoubtedly influences the conclusions is the seasons in two areas. It can be hypothesized that the color composition will be more distinguished in warmer months, among other things, because people have more exposed skin, the color of the skin would be neglected in the results, and then the impact of the remaining parts of the clothing may increase. Another hypothesis takes into account the division into time blocks where, for example, due to daylight and darkness, these shares can be different. These hypotheses will be part of further experiments.

It has to be said that these data were collected in the narrowly specific category of retail, telecommunications. They may vary considerably in another sector. At the same time, the period (autumn) in which the data was collected may vary considerably across the year.

In general, the following can be inferred from the results:

- Stores that are visited by more people aged 18-40 have lower potential
- Stores that are visited by more people dressed in brown and gray have lower potential
- Stores visited by more people over the age of 61 in the morning have lower potential
- Stores visited by more people over the age of 61 in the evening have higher potential
- Stores that are visited by more people dressed mostly in pink in the afternoon have a higher potential
- Stores that are visited by more people dressed mostly in pink in the evening have a lower potential

Partial results within one four-hour block are not conclusive enough.

Results show that factors such as age, gender and color of clothes affect sales results and customer willingness to buy. We can confirm that results from India (Deschwal, 2016) and from the USA (Roy Dholakia, 1999) are valid also in the Czech Republic in the field of telecommunications. We can develop an application which will use computer vision and update these statistics over time. With valid information, it is possible to achieve better sales results or lower costs. With information that one of our stores is visited mostly by customers aged 18-40 (which has lower potential, according to our results), we set our sales goals to be more motivational and get better performance from our sales representatives. This is the main benefit of this research. The chosen methodology has proved to be applicable for further research and commercial use.

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Primary Paper Section: I

Secondary Paper Section: IN



J INDUSTRY

JA	ELECTRONICS AND OPTOELECTRONICS
JB	SENSORS, DETECTING ELEMENTS, MEASUREMENT AND REGULATION
JC	COMPUTER HARDWARE AND SOFTWARE
JD	USE OF COMPUTERS, ROBOTICS AND ITS APPLICATION
JE	NON-NUCLEAR POWER ENGINEERING, ENERGY CONSUMPTION AND UTILIZATION
JF	NUCLEAR ENERGY
JG	METALLURGY, METAL MATERIALS
JH	CERAMICS, FIRE-PROOF MATERIALS AND GLASS
JI	COMPOSITE MATERIALS
JJ	OTHER MATERIALS
JK	CORROSION AND MATERIAL SURFACES
JL	FATIGUE AND FRACTURE MECHANICS
JM	STRUCTURAL ENGINEERING
JN	CIVIL ENGINEERING
JO	LAND TRANSPORT SYSTEMS AND EQUIPMENT
JP	INDUSTRIAL PROCESSES AND PROCESSING
JQ	MACHINERY AND TOOLS
JR	OTHER MACHINERY INDUSTRY
JS	RELIABILITY AND QUALITY MANAGEMENT, INDUSTRIAL TESTING
JT	PROPULSION, ENGINES AND FUELS
JU	AERONAUTICS, AERODYNAMICS, AEROPLANES
JV	COSMIC TECHNOLOGIES
JW	NAVIGATION, CONNECTION, DETECTION AND COUNTERMEASURE
JY	FIREARMS, AMMUNITION, EXPLOSIVES, COMBAT VEHICLES

WASTE MANAGEMENT OF EU COUNTRIES RELATED TO CIRCULAR ECONOMY ISSUES

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Abstract: In a situation where the coronavirus pandemic has caused a number of socio-political-economic challenges around the world. It has been changing the values of all entities from the largest to the smallest since its outbreak. Nowadays, we need to create the conditions for a sustainable coexistence of man and nature more than ever, incorporating waste management further within the circular economy. In this scientific paper, we focus on measuring indicators of circular economy set up by the EU to analyze the development, compare the V4 countries, and find new solutions. Only continuous monitoring can contribute to the transition of the existing linear market economy system to its greater efficiency and sustainability throughout the value chain.

Keywords: sustainable development, circular economy, European union, V4 countries

1 Introduction and Problem Formulation

Already in 1989, Norwegian philosopher A. Naess said that there was a general need to find ethical solutions for economic problems. Practical answers do not exist only from an economic perspective. So far, economic development, especially in developed countries, has led to significant environmental changes. The life of future generations is in danger and there is a legitimate question: why is high consumption the basic norm of conscious people? (Measured as a positive result in economic growth) (A. Naess, 1989).

In the last few decades, the concept of sustainable development has been creating an integral part of governmental and corporational governance. Despite its unprecedented importance of responsible behavior for the well-being of future generations, sustainability has a significant role in bridging the gap between policy, theory, and practice (L. M. A. Bettencourta, J. Kaurc, 2011).

According to R. W. Kates (2011), Sustainable Science has a rather interdisciplinary character which can only be succeeded by implementing its principles in order to avoid tremendous environmental and developmental threats. To tackle global challenges, which predictably are on the rise, the integration of this knowledge among policymakers, researchers, and funders is key in bringing science and society to life. Only critical reflection at all levels through common integration calls can provide the necessary intuitional framework (W. Mauser et al., 2013).

The rapid outbreak of COVID-19 is changing the whole world. It affects the socio-political-economic environment of countries all over the world. The values and consequent behaviors are changing, moving on from the international, governmental, institutional, and business levels to the individual one. There are voices from respected representatives of the professional public warning that nothing will be the same again as before. Therefore, there are legitimate questions as to how the current situation will help or harm sustainable development; the extent of which is difficult to estimate. Despite uncertainties, reports from the end of March 2020 prove the positive impact of the lockdown on, among other things, the clearing of seawater and the return of fish in Venice. Furthermore, the Earth Overshoot Day (the date when people have used up the planet's annual resources) in 2020 lands on August 22 (Footprintnetwork.org., 2020), whereas in 2019 it was on July 29. Due to the pandemic, it is the first time since the start of its measuring when people have decreased their global footprint (Overshootday.org, 2020).

What is more, there are also questions about the compliance or non-compliance of individual member states with the sustainable development measures of the EU while they attempt to mitigate the economic impact of the crisis. The focus, however, should

not be on re-investing into previous economic systems, but on the creation of new ones that respect the sustainability principles as previously agreed upon in the EU agenda.

Business as usual has generated a significant level of growth, whereas, at the same time, it has caused a variety of challenges, as well. The "take-make-consume-dispose" model of the linear economy has taken for granted the abundance of resources and their availability. An economic growth based on the above-mentioned approach would result in a need for two planets in order to meet our demands. (R. C. Brears, 2018).

One of the side effects of overwhelming consumption and irresponsible behavior which destroys not only land but also the maritime environment is waste generation. The current linear model does not use sources efficiently nor does it deal with waste recovery in a sophisticated manner. Since 1970, material extraction tripled in 2017, and it continues to grow (Eurlex.europa.eu, 2019).

To transform a linear economic model to reach ambitious EU aims until 2050, we need to take proper actions and decisions within the next five years. The highest priority is to achieve climate-neutral and circular economy transformation, which is considered to be an opportunity for sustainable, green, and digital business challenges. Furthermore, the strategic part of the EU Green Deal is a new circular economy action plan. This plan represents a policy framework to reduce, reuse, and recycle materials as well as to stimulate the common circular design of products in order to minimize its harmful environmental impacts.

According to M. Fischer (in Incien, 2017) from the Ministry of Environment of the Slovak Republic, the following should be prioritized: a "change of attitude and thinking at all levels, consumer, academic or political. The transition to a circular economy cannot take place without the involvement of all stakeholders and without everyone being aware of their role in this process." Moreover, the present policy frameworks of individual economies so far have only been transforming the transition to the circular model in the domestic environment. However, it would be essential to be aware of their strong interaction with the international value chain, as well (OECD, 2018).

Nowadays, in the EU market, only 12 % of all materials are recycled. The circular economy is one of the priorities of the EU Green Deal. It is based on using the resources more efficiently while generating less waste. That is why waste management should be one of the main milestones of member states. In order to achieve it, we need to properly and continuously measure indicators of the circular economy set up by the EU and we need to analyze the development, make direct comparisons between the V4 countries, and find new solutions.

2 Methodology

When processing the present scientific paper, the following scientific methods were used: through taking a closer look at the literature, we searched for and obtained professional and scientific information related to the issue, and by applying abstraction, we selected the most relevant ones for our research. We collected information and data for the processing of relevant facts about sustainability and circular economy from the sources of the professional and scientific public, such as Brears R.C., Kaurc J., Naess A., Mauser W. as well as from the international and Slovak institutions such as the OECD, Eurostat, European Commission, the Institute of Circular Economy, and Global Footprint Network.

Through synthesis, we have developed a general view of the significance of the circular economy in the context of international trade. The method of analysis, induction, and

deduction developed parts of the paper in which we deal in more details with the importance and implementation of the circular economy principles through the analysis of its indicators. In the logical sequence of the acquired knowledge, we further compare the elements of circularity in the EU and formulate the conclusions of their possible further development. In this scientific article, we also use mathematical-statistical and graphical methods to specify and clarify the basic context and development trends of relevant indicators.

For a comprehensive insight into the issues addressed through the evaluation of selected indicators in the field of the circular economy, we evaluate the current situation in selected countries, with an emphasis on the Visegrad group.

3 Circular economy in the EU countries

The circular economy (CE) can be considered an effective business model in the fight against excessive waste generation and environmental pollution. Its main principle is the reuse of waste, respectively, the reuse of products no longer used in the value chain. CE is a comprehensive system where the implementation of its basic standards is possible at all levels of the value chain.

Whether the given countries have already implemented or are in the process of implementing CE into their national economy, we can measure and analyze it through 4 main areas of the economy, divided into 10 main indicators set by the European Union as follows (Ec.europa.eu., a. 2019):

PRODUCTION AND CONSUMPTION

1. EU self-sufficiency in the use of primary raw materials in production (to what extent is the EU independent from the rest of the world in some selected primary raw materials)
2. Green public procurement (share of total public procurement for a given period of time)
3. Waste generation (municipal waste production per person, total municipal waste production)
4. Food waste generation

WASTE MANAGEMENT

5. Municipal waste recycling rate
6. Recycling rate: total packaging waste, plastic packaging waste, wood waste, electrical and electronic waste, recycled bio-waste per person and recovery rate from construction and demolition waste

SECONDARY RAW MATERIALS

7. Circular material use rate (share of demand for secondary raw materials in total demand for raw materials)
8. Trade in recyclable raw materials

COMPETITIVENESS AND INNOVATION

9. Private investments, jobs and gross value added to CE sectors
10. Patents (related to waste management and recycling)

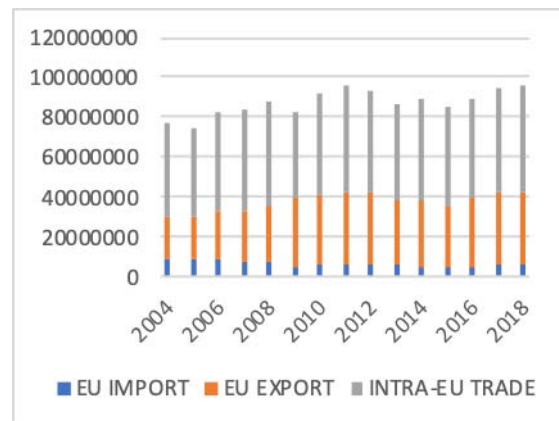
In order for the circular economy to be progressively introduced into the currently prevailing linear model, its continuous monitoring is essential. Therefore, we will subsequently focus on the analysis of the development of selected CE indicators in the EU and its closer quantification and comparison in the V4 countries.

3.1 Secondary raw materials

The first CE indicator examined is the EU's trade in secondary (recyclable) raw materials, resp. waste whose material composition consists mainly of wastes and their forms of paper, plastic, precious metals, iron and steel, and various other types of metals and scrap. Graph 1 shows the development of the EU

trade in recyclable secondary raw materials with non-member countries between 2004 and 2018.

Graph 1 EU trade in recyclable raw materials in the years 2004 - 2018 (in millions of tons)



Source: own processing according to Ec.europa.eu. (eurostat), online, 2018d

Since 2004, imports of recyclable waste from non-EU countries have shown a predominantly declining trend. In 2004, imports amounted to 9.1 million tons, while in 2018 it amounted to 5.9 million tons, a decrease of 35%. On the contrary, the export of recyclable raw materials in the given period increased by 69%, and its value in 2018 reached 36.8 million tons. The total value of exports in 2018 was EUR 14 billion. Intra trade in EU countries with recyclable raw materials has developed slightly cyclically since 2004; which, quantitatively speaking, far outnumbered EU trade with third countries. In 2018, trade between EU member states amounted to more than 58 million tons (Ec.europa.eu., b. 2018).

Among the most important export markets (outside the EU) in terms of the volume of exports of secondary raw materials in 2018 were (Ec.europa.eu., b. 2018):

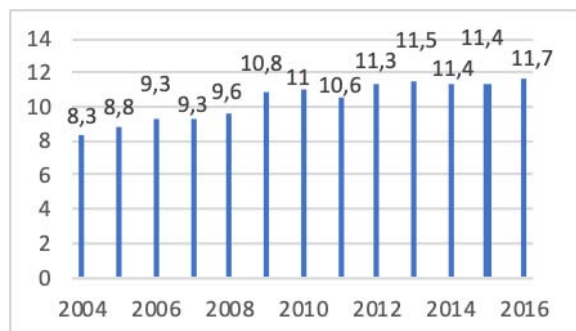
1. Turkey (12.8 million tons)
2. China (5.1 million tons)
3. India (4.6 million tons)
4. Indonesia (1.9 million tons)

Among the most important markets from which the EU imported recyclable waste in 2018 were (Ec.europa.eu b. 2018):

1. China (1.6 million tons)
2. Norway (1.1 million tons)
3. USA (0.8 million tons)
4. Russia (0.6 million tons)

An indicator that measures the share of recovered material (in other words, one that is returned to the economy) in the total material used is called CMU (Circular material use). It is calculated as the proportion of material returned to circulation in the total volume of materials used over a period of time. Increasing the CMU rate means that secondary materials replace primary raw materials and thus reduce the environmental burden (Ec.europa.eu., c. 2018). The evolution of the CMU rate between 2004 and 2016 in the EU is shown in Graph 2.

Graph 2 Circular material use development in the EU in the years 2004 - 2016 (in %)



Source: own processing according to Ec.europa.eu. (eurostat), online, 2018e

The rate of the CMU indicator has been on the rise in EU countries since 2004. A slight decrease was recorded in 2011, along with a slight stagnation in 2014 and 2015 (Ec.europa.eu., c. 2018). Table 1 shows the development of the CMU indicator of selected EU countries in the observed period, from 2014 to 2016.

Table 1 Circular material use in the selected EU countries in the years 2014 – 2016 (in %)

No.	country/year	2014	2015 *	2016
1.	Netherlands	26.6	25.9	29
2.	France	17.8	18.7	19.5
3.	Belgium	18.2	18.3	18.9
4.	United Kingdom	15.6	16.2	17.2
5.	Italy	16.8	16.6	17.1
6.	Estonia	11	11.2	11.8
	EU	11.4	11.4	11.7
7.	Germany	10.7	11.2	11.4
8.	Austria	9.1	10	10.6
9.	Poland	12.5	11.6	10.2
10.	Slovenia	8.4	8.5	8.5
13.	Czech Republic	6.9	6.9	7.6
16.	Hungary	5.4	5.8	6.4
19.	Slovak Republic	4.8	5	4.9

* = estimated data according to EUROSTAT

Source: own processing according to Ec.europa.eu. (eurostat), online, 2018e

The European average of the material use rate of the total amount of material used in 2016 was 11.7%. Countries above the EU average in 2014-2016 included: the Netherlands (29%), France (19.5%), Belgium (18.9%), the United Kingdom (17.2%), Italy (17.1%), and Estonia in 6th place (11.8%). The ten countries with the best CMU rates (but below the European average) were closed by Germany, Austria, Poland, and Slovenia. The Slovak Republic (4.9% in 2016) ranked 19th, which was the worst ranking within the CMU rate among the V4 countries - 9th place Poland, 13th place the Czech Republic, and 16th place Hungary.

3.2 Competitiveness and innovation

In EU countries, the link between the growth of competitiveness and the growth of environmental responsibility can be observed at the same time. One of the key indicators of progress is innovation. It is through successful patents in this direction that we can assess the technological advances that improve the process of transition from the current model of the economy to the circular one. Graph 3 shows the development of the number of EU patents related to recycling and processed secondary raw materials in the years 2000-2015.

Graph 3 Development of the number of patents related to the recycling and processing of secondary raw materials in the EU in the years 2000 – 2015

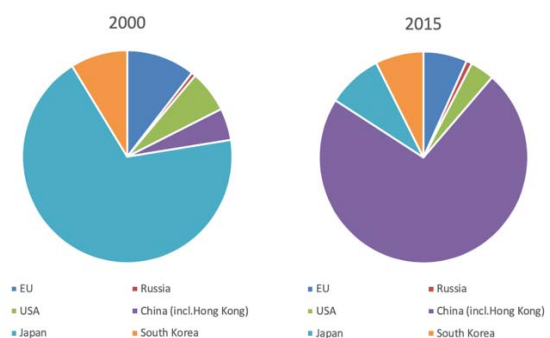


Source: own processing according to Ec.europa.eu. (eurostat), online, 2018f

As Graph 3 shows, the growth in the number of patents related to the recycling and processing of secondary raw materials from 2000 to 2015 has been very slow in EU countries. Among the countries with the highest number of patents in 2015 is Germany 89.87, Poland 67.4, and France 36.68. In the V4 countries, the Czech Republic ranked second after Poland 9.58, the Slovak Republic 6.2, and Hungary in the number of 1.33 patents per year.

Graph 4 shows the number of CE-related patents in EU countries compared to the number of CE-related patents in the US, Japan, Russia, China (including Hong Kong), and South Korea in 2000 and 2015.

Graph 4 Number of patents related to circular economy in EU, USA, Japan, Russia, China (Hong Kong included) and South Korea in the years 2000 – 2015 (in %)



Source: own processing according to Ec.europa.eu. (eurostat), online, 2018f

Graph 4 shows that Japan had the largest share (69%) in the number of patents filed in 2000 among the examined countries, representing more than 2000 patents in 2000. The European Union came in second with 11%, which was equivalent to approximately 310 patents. In third place, with a share of 9% (less than 259 patents), was South Korea. However, during the observed 15 years, a significant change in the share of patents among the monitored economies can be observed. In 2015, China (including Hong Kong) occupied the first position with a share of 73%, which amounted to approximately 3,810 patents. It was followed by Japan with an 8% share (444 patents) and South Korea (7%) with 391 patents per year.

According to the figures in Graph 4, it can be stated that the European Union, as one of the most developed regions in the world, is not making sufficient progress in the field of innovation related to the circular economy. The aforementioned halt in the import of waste from third countries, its return to the EU Member States, and the continued growth of waste calls for a much more strategic policy of the Member States in this area. It

is these innovations that can contribute to more efficient waste recovery and, at the same time, to the sustainable development of Europe.

The positives or negatives of development in the sectors dealing with recycling, repair, reuse of goods, renting and leasing are also determined by indicators such as: Employment in the relevant sectors and Gross investment in tangible goods. Table 2 shows the development of the employment rate in the sectors related to recycling, repairs, reuse of goods, renting and leasing, in the years 2008-2010 and 2015-2017 on total employment.

Table 2 Employment rate in the sectors of recycling, repair, reuse of goods, renting and leasing in total employment in the selected EU countries in the years 2008 – 2010 and 2015 – 2017 (in %)

country/year	2008	2009	2010	2015	2016	2017
Latvia	2.33	2.38	2.48	2.86	2.89	2.82
Lithuania	2.46	2.24	2.33	2.72	2.69	2.77
Croatia	:	:	2.1	2.21	2.19	2.21
Poland	2.17	2.01	2.07	2.21	2.21	2.2
Italy	2.17	2.1	2.11	2.05	2.05	2.06
Slovenia	1.83	1.78	1.88	2.17	2.09	2.06
Spain	1.6	1.61	1.67	2	2.04	2.04
cypress	1.56	1.5	1.5	1.91	1.99	1.99
Hungary	1.69	1.86	1.89	1.82	1.92	1.88
Portugal	1.73	1.76	1.75	1.81	1.82	1.84
Slovak Republic	1.16	1.07	2.13	1.78	1.76	1.78
Bulgaria	1.59	1.61	1.73	1.72	1.76	1.72
EU	:	:	:	1.7	1.73	1.69
France	:	:	1.66	1.54	1.52	1.64
Finland	1.44	1.49	1.58	1.74	1.65	1.58
Sweden	1.61	1.53	1.53	1.58	1.56	1.58
Romania	1.49	1.44	1.42	1.54	1.58	1.54
Greece	:	:	:	1.43	1.65	1.52
Austria	1.47	1.47	1.46	1.5	1.49	1.51
Germany	1.15	1.32	1.41	1.43	1.47	1.49
Netherlands	1.17	1.17	1.22	1.17	1.18	1.19
Belgium	:	1.13	1.13	1.16	1.11	1.1
Czech Republic	:	:	:	:	:	:
Denmark	1.52	1.24	1.24	1.38	1.36	:
Estonia	1.75	:	:	:	2.01	:
United Kingdom	1.45	1.51	:	1.59	:	:

: = data not obtained

Source: own processing according to Ec.europa.eu. (eurostat), online, 2018g

The average of EU countries in the share of people's employment in the sectors of recycling, repair, reuse of goods, renting and leasing in total employment in 2017 was approximately 1.7%. The country where the share of employment (in the above sectors) was the highest in 2017 is Latvia, with a share of 2.82%. Of the V4 countries, Poland achieved the best results in the same year, 2.2%, followed by Hungary 1.88% and Slovakia 1.78%. No data were recorded from the Czech Republic. A positive result was that the V4 countries (apart from the Czech Republic) exceeded the EU average. Countries that did not record values for the last monitored year 2017 are marked in a gray frame. EU countries not listed in Table 2 did not report any data in the observed indicator. These are: The Republic of Ireland, Luxembourg and Malta.

Subsequently, for comparison, Table 3 shows the percentage share of gross investment in tangible goods (including land) in total GDP - in the sectors of recycling, repair, reuse of goods, renting and leasing, between 2008-2010 and 2015-2017.

Table 3 Gross investment in tangible goods (including land) as % of GDP (in the sectors of recycling, repair, reuse of goods, renting and leasing) in the selected EU countries in the years 2008 – 2010 and 2015 – 2017 (in %)

country/year	2008	2009	2010	2015	2016	2017
Latvia	0.55	0.49	0.27	0.27	0.27	0.35
Lithuania	0.24	0.1	0.1	0.14	0.14	0.23
Romania	0.49	0.26	0.25	0.2	0.2	0.21
Slovak Republic	0.48	0.24	0.23	0.21	0.17	0.21
Bulgaria	:	:	0.29	0.18	0.18	0.17
Poland	0.19	0.16	0.17	0.18	0.17	0.16
Belgium	:	0.27	0.16	0.15	0.15	0.15
Hungary	0.1	0.12	0.11	0.13	0.17	0.14
Netherlands	:	0.15	0.14	0.12	0.12	0.13
EU	:	:	:	0.12	0.12	0.12
Croatia	:	:	0.19	0.15	0.11	0.12
cypress	0.14	0.13	0.08	0.06	0.06	0.12
Portugal	0.18	0.16	0.14	0.1	0.12	0.12
Germany	0.08	0.08	0.08	0.09	0.09	0.1
Spain	0.12	0.08	0.09	0.09	0.09	0.1
Austria	0.12	0.11	0.08	0.09	0.08	0.1
Sweden	0.19	0.14	0.11	0.13	0.14	0.1
Italy	0.18	0.21	0.2	0.1	0.13	0.09
Finland	0.11	0.09	0.09	0.09	0.1	0.08
Greece	:	:	:	0.04	0.04	0.05
Czech Republic	:	:	:	:	:	:
Denmark	0.14	0.09	0.08	0.09	0.09	:
Estonia	0.28	:	:	:	0.15	:
France	:	0.1	0.11	0.11	:	:
Slovenia	:	0.3	0.26	:	:	:
United Kingdom	:	:	:	0.15	:	:

: = data not obtained

Source: own processing according to Ec.europa.eu. (eurostat), online, 2018h

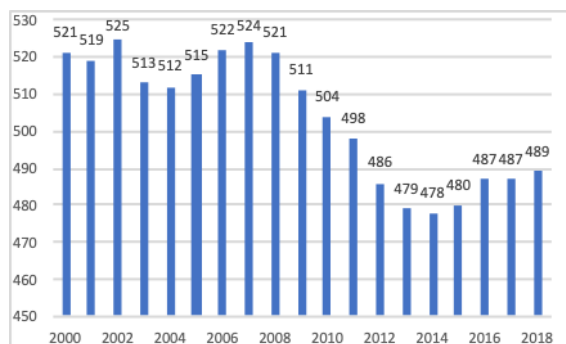
The data in Table 3 reveal that investments in CE-related sectors are very low. None of the monitored EU countries exceeded the half-percent mark in this indicator (with the exception of Latvia, in 2008). Of the V4 countries, the Slovak Republic with 0.21% was ranked first in 2017, followed by Poland 0.16%, and Hungary 0.14%. The Czech Republic again did not report any data in this area. The countries in the gray framework are those that did not record any data for the last monitored year 2017. Table 3 does not include those EU countries that do not report data for any reference period. They are again the Republic of Ireland, Luxembourg, and Malta.

3.3 Production and consumption

In the third group "Production and consumption", the total production of municipal waste will be elaborated. This type of waste includes that which is collected by municipal units and disposed of through the legislation of the state. A large part of the waste is made up of household waste, but we also include waste from public institutions and offices. Graph 5 shows the

development of waste production in EU countries in kilograms per person, in the years 2000 to 2018.

Graph 5 Generation of municipal waste in the EU in the years 2000 - 2018 (in kg/person)



Source: own processing according to Ec.europa.eu. (eurostat), online, 2018i

The average generation of municipal waste per capita in the EU has increased slightly over the last four years. In 2018, the total production of municipal waste per person was 489 kg. The smallest recorded value of the given indicator in 2014 was 478 kg / person. On the contrary, the highest level in the observed period was in 2002, amounting to 525 kg / person.

Among the EU countries, Romania (272 kg) reached the lowest value in the production of municipal waste per capita in 2018. In contrast, the country that produced the most municipal waste per capita in 2018 is Denmark (766 kg). An overview of the total generation of municipal waste per capita in all EU member states, in the years 2000, 2010, and from 2016 to 2018 is shown in Table 4.

Table 4 The municipal waste generation in EU countries in the years 2000, 2010, 2016 – 2018 (in kg/person)

country/year	2000	2010	2016	2017	2018
Romania	355	313	261	272	272
Poland	320	316	307	315	329
Czech Republic	335	318	339	344	351
Hungary	446	403	379	385	381
Estonia	453	305	376	390	405
Latvia	271	324	410	411	407
Belgium	471	456	419	411	411
Slovak Republic	254	319	348	378	414
Bulgaria	612	554	404	435	423
Croatia	262	379	403	416	432
Sweden	425	441	447	452	434
Lithuania	365	404	444	455	464
Spain	653	510	463	473	475
Slovenia	513	490	457	471	486
EU	521	504	487	487	489
Italy	509	547	497	488	499
Portugal	457	516	474	487	508
Netherlands	598	571	520	513	511
France	514	534	521	526	527
Finland	502	470	504	510	551
Austria	580	562	564	570	579
Luxemburg	654	679	609	615	610
Germany	642	602	633	627	615
Malta	533	601	593	631	640

Denmark	664	:	782	782	766
Ireland	599	624	581	576	:
Greece	412	532	498	504	:
cypress	628	689	640	637	:
United Kingdom	577	509	483	468	:

: = data not obtained

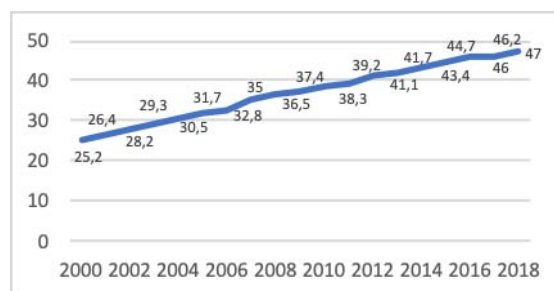
Source: own processing according to Ec.europa.eu. (eurostat), online, 2018i

Based on Table 4, it can be concluded that although the total production of municipal waste has increased slightly in recent years, it has decreased by 30 kg per person compared to 2000. Of the V4 countries, Poland (329 kg / person) was the best in 2018, followed closely by the Czech Republic (351 kg / person), Hungary (381 kg / person), and Slovakia (414 kg / person) last. On the positive side, all V4 countries are below the European average in total municipal waste production. On the other hand, as follows from the development from 2000 to 2018, Hungary clearly recorded the most positive results in reducing municipal waste generation; and the worst development was recorded in the Slovak Republic, which increased waste generation by 160 kilograms per person since 2000.

3.4 Waste management

More efficient waste management is also possible thanks to its recycling. Graph 6 shows the development of the municipal waste recycling rate in the EU in the years 2000-2018.

Graph 6 The municipal waste recycling rate in the EU in the years 2000 – 2018 (in %)



Source: own processing according to Ec.europa.eu. (eurostat), online, 2018j

The results of Graph 6 confirm that the average recycling rate of municipal waste in the observed period in the EU countries increased slightly. In 2000, its value was 25.1% compared to 2018 when it reached 47%. Table 5 shows the percentage of municipal waste recycling in EU countries, in the years 2000, 2010 and 2016-2018.

Table 5 The municipal waste recycling rate in the EU countries in the years 2000, 2010, 2016 – 2018 (in %)

country/year	2000	2010	2016	2017	2018
Germany	52.5	62.5	67.1	67.2	67.3
Slovenia	6	22.4	55.6	57.8	58.9
Austria	63.4	59.4	57.6	57.7	57.7
Netherlands	44.1	49.2	53.5	54.6	55.9
Belgium	49.7	54.8	53.5	53.9	54.6
Lithuania	0	4.9	48	48.1	52.5
Luxemburg	36.1	46.5	48.2	50.4	50.1
Italy	14.2	31	45.9	47.8	49.8
Denmark	37.1	:	46.7	46.9	47.9
EU	25.2	38.3	46	46.2	47
Sweden	38.5	47.8	48.4	46.8	45.8

France	24.5	36	41.9	43	44
Finland	33.6	32.8	42	40.5	42.3
Hungary	1.6	19.6	34.7	35	37.4
Slovak Republic	5.1	9.1	23	29.8	36.3
Bulgaria	15.5	24.5	31.8	34.6	36
Spain	18.4	29.2	33.9	33.1	36
Czech Republic	0.9	15.8	33.6	34.1	34.5
Poland	2.1	16.3	34.8	33.8	34.3
Portugal	10.5	18.7	30.9	28.4	28.9
Estonia	2.4	18.2	28.1	28.4	28
Croatia	:	4	21	23.6	25.3
Latvia	0	9.4	25.2	24.8	25.2
Romania	0	12.8	13.3	14	11.1
Malta	10.1	5.2	7	7.1	6.5
Ireland	11.9	35.7	40.7	40.4	:
Greece	8.8	17.1	17.2	18.9	:
cypruss	3	10.7	17.2	16.1	:
United Kingdom	11.1	40.2	44	43.8	:

: = data not obtained

Source: own processing according to Ec.europa.eu. (eurostat), online, 2018j

According to the data in Table 5, it is clear that the recycling rate of municipal waste was below the average (47%) in most European countries during the period under review. The Member State with the highest rate of municipal waste recycling in 2018 was Germany (67.3%). The positive results of two economies are significant: Slovenia, which ranked just behind Germany in 2018, with a municipal waste recycling rate of 58.9%, while in 2000 it had reached a level of only 6%. Similarly, Lithuania in 2000, with a municipal waste recycling rate of 0%, reached the sixth position in 2018, with a municipal waste recycling rate of 52.5%. Of the V4 countries, Hungary (37.4%) achieved the highest rate of municipal waste recycling in 2018, followed by the Slovak Republic (36.3%), the Czech Republic (34.5%), and Poland (34.3%). We can evaluate positively the development of all V4 countries, which have increased the rate of municipal waste recycling since 2000. Nevertheless, it is worth emphasizing that the recycling rate of all types of waste is constantly increasing. A successful example is Slovenia, which is currently one of the leaders in a separate collection. The goal of the country is to achieve the so-called concept of "zero-waste", which helps to build an economy based on circular models of the economy (Detersová, 2019).

4 Conclusion

In recent decades, we have seen significant societal changes related to enormous, but also destructive human activity. These are negative externalities of individuals and groups, which are immediately reflected in changes in existing systems and living conditions around us. As changes in nature can in some way affect the functioning of individuals, companies, and entire nations, the concept of sustainability is increasingly used in professional circles. It is this concept which takes into account the needs of future generations based on the idea of changing the current market system towards greater consumer awareness, but also towards more efficient use of resources by society.

An important understanding on the part of individual national economies and their international forms of cooperation is the fact that the consumerist way of life causes an enormous burden on the environment, the changes which, either directly or indirectly, affect the lives of its inhabitants. Economic growth based only on the quantitative growth of products and services is not

directly related to the growth of human well-being. This situation also creates a number of negative externalities that do not yet take into account possible future economic losses in the area of social quality of life, environmental protection, or future economic costs.

Sustainable development and its principles can be applied to the lives of individuals, communities, nations, and also to international institutions. The result is a lower (in terms of volume) and more efficient use of natural resources. It is the model of a circular economy that can be considered a concept based on the theory of sustainable development and can be applied in the fight against excessive waste generation. The circular economy represents the transition of the existing linear system of the market economy to higher efficiency and sustainability throughout the value chain. The concept of the circular economy represents a set of strategies – some of the original ones, such as reducing consumption, reuse, and recycling, along with several new ones, the preference to borrow items from owners, for instance. All this aims to restructure the global economy to reduce waste. The application of circular economy strategies does not focus on halting economic growth, instead, it aims to change our approach to the management of resources and to restore harmony with nature in the interest of continued, albeit high-quality growth. The transition to a circular economy can contribute to the creation of new job opportunities, but this should be preceded by a comprehensive change in existing business structures. However, the circular economy may also negatively affect some existing, less efficient sectors. From a long-term perspective, nevertheless, we are talking about the logical and necessary direction of the existing global business structures.

According to our analysis, it is found that even if the new action plan represents a new approach to a more sustainable future in Europe, there is a lack of development in terms of examined indicators in the past. Since 2004, the circular material use has been increasing fairly slowly, along with the number of patents in comparison to China. Moreover, the ranking of all V4 countries is behind the EU average. Employment rate and gross investment related to the circular economy are indicators in which V4 countries scored above the EU average, except for the Czech Republic with no obtained data. In addition, the generation of municipal waste per capita has declined since 2000. However, this indicator slightly increased to 489 kg/person in 2018. The positive results of V4 countries are that all of them reached better scores than the EU average. What is even more important is the development of the selected indicator. Since 2000, it only declined in Hungary (446 kg) to 381 kg in 2018; whereas in Slovakia, waste generation increased from 254 kg in 2000 to 414 kg in 2018. Furthermore, the recycling rate of municipal waste in Visegrad group was far behind the EU average. Effective waste management and higher recycling standards are needed in all V4 countries. There is a potential to implement principles of the circular economy within the V4 to create new business and job opportunities at the same time as to decline waste generation, make a more effective material/product life cycle, and shape a more sustainable EU market.

The situation that arose after the outbreak of the coronavirus pandemic presented us all with new challenges in this area, as well. In our view, in the current situation, even more than before, with sufficient human and financial capacity in science and research, we can become leaders in this rebirth. So how to get out of the vicious circle of the linear economy and return to the "nature-based economy"? Perhaps the coronavirus pandemic will pave the way for these solutions for humanity; in a way that we move from classical, long-established solutions towards new and different approaches. We can only hope that humanity will learn even more and that it will not be the other way around, and in the pursuit of economic recovery, measures aimed at sustainable development will not be abandoned.

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METHOD FOR FORECASTING OF INTERFERENCE IMMUNITY OF LOW FREQUENCY SATELLITE COMMUNICATION SYSTEMS

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Abstract: This article describes analysis of interference immunity of low frequency satellite communication systems under conditions of ionosphere disturbances accompanied by formation of small-scale irregularities of electron concentration. The model of electron concentration distribution in disturbed ionosphere and the model of transionospheric communication channel have been developed allowing to determine probability of erroneous signal reception as a function of root-mean-square deviation of small-scale fluctuations of total electron content. In order to determine them by GPS sounding, dual frequency receiver GPStation-6 of satellite navigation systems has been modified expanding significantly its capabilities. It is exemplified by modification of interference immunity of Gonets-D1M satellite communication system upon increasing fluctuations of total electron content during formation of regions with small-scale irregularities of electron concentration in ionosphere. The obtained results allow to develop practical recommendations for improvement of interference immunity of satellite communication systems under ionosphere disturbances on the basis of GPS sounding.

Keywords: dual frequency receiver, GPS sounding, interference immunity, ionosphere disturbance, satellite communication systems, satellite navigation systems, small-scale irregularities, total electron content.

1 Introduction

It is known [1, 2] that in the regions of equatorial and polar latitudes, natural disturbances of ionosphere are observed which cause interference fading (scintillations) of received signals upon transionospheric radio wave propagation (RWP) in satellite communication systems (SCS). In addition, impacts on ionosphere by powerful heating facilities, injection of easily ionized chemical substances, and other artificial factors can cause frequency selective fading and intersymbol interference of received SCS signals [3, 4]. Under such conditions, interference immunity of satellite radio systems drops significantly (by several orders of magnitude).

Analysis of reasons of ionospheric scintillations in SCS demonstrates as follows [5, 6]. Natural and artificial phenomena in the regions of equatorial and polar latitudes can result in occurrence of specific ionospheric formations. They are comprised of small-scale irregularities of electron concentration (ΔN_i) with regard to average (background) value (\bar{N}). These small-scale irregularities are expanded along the Earth magnetic field, their transversal dimensions are $l_i = 10 \dots 1000$ m. The small-scale irregularities of electron concentration stipulate small-scale fluctuations of total electron content (TEC) in ionosphere $\Delta N_n \sim \Delta N_i z_e$ with equivalent thickness z_e with regard to average TEC ($\bar{N}_r \sim \bar{N} z_e$) along RWP route from transmitter (XMTR) of spacecraft (SC) to on land receiver (RCVR) of SCS. Under conditions of ionosphere disturbances and occurrence of ionospheric formations, the small-scale TEC fluctuations ($\Delta N_n \sim \Delta N_i z_e$) can increase by 1–3 orders of magnitude and higher in comparison with normal (nondisturbed) ionosphere.

Therefore, RWP under such conditions is accompanied by dissipation of radio waves on small-scale irregularities, occurrence of multipath propagation and fading of received signals [1–6]. Moreover, with increase in small-scale TEC fluctuations and decrease in carrier frequency (f_0) of SCS, relative phase ($\Delta \varphi_i \sim \Delta N_n / f_0$) and time ($\Delta \tau_i \sim \Delta N_n / f_0^2$) lagging of incoming beams will increase. As a consequence of interference of incoming beams, the average signal power at SCS receiver input will be comprised of regular and fluctuation constituents $\bar{P}_r = P_{reg} + P_{fl}$, their ratio depends on $\Delta \varphi_i$ and determines the parameters of Rician fading and scintillation index of received signals:

$$\gamma^2 = P_{reg} / P_{fl} \sim 1 / \Delta \varphi_i^2, S_4^2 \sim P_{reg} / \bar{P}_r \sim \Delta \varphi_i^2. \quad (1), (2)$$

The mentioned parameters γ^2 and S_4^2 characterize the depth of general (that is, nonselective, smooth) fading of received signals. However, with the increase in phase ($\Delta \varphi_i \sim \Delta N_n / f_0$) and time ($\Delta \tau_i \sim \Delta N_n / f_0^2$) shifts of incoming beams, there occurs narrowing of the coherence bandwidth of incoming beams (that is, the interval of frequency correlation) of transionospheric communication channel $F_c = 1 / \Delta \tau_i \sim f_0^2 / \Delta N_n$, which can lead to occurrence of frequency selective fading (FSF) $F_0 / F_c \geq 1$ and intersymbol interference (ISI) $\Delta \tau_i \approx 1 / F_c \geq T_s$ upon transmitting signals with wide spectrum band F_0 and low duration T_s [5, 6]. Existence of general fading, FSF and ISI in transionospheric communication channel leads to significant decrease in SCS interference immunity.

It is obvious that the most significant influence of the mentioned RWP factors via disturbed ionosphere is exerted on SCS interference immunity with low orbit SC upon operation at relatively low carrier frequencies ($f_0 = 137 \dots 138$ MHz and $f_0 = 387 \dots 390$ MHz) [7]. Further on, such SCS will be referred to as low frequency.

Therefore, under conditions of ionosphere disturbances and occurrence of ionospheric formations with small-scale irregularities, the SCS interference immunity (characterized by probability of erroneous signal receiving $P_{err} = \psi(h^2)$ as a function of signal/noise ratio h^2) will depend on TEC fluctuations (ΔN_n) and selection of the frequency and time parameters of signals (f_0, F_0, T_s): $P_{err} = \psi(h^2, \gamma^2, F_c) = \psi(h^2, \Delta N_n, f_0, F_0, T_s)$.

SCS interference immunity under conditions of occurrence of ionospheric formations with small-scale irregularities can be improved on the basis of monitoring of TEC fluctuations of ionosphere (ΔN_n) and adaptation of the frequency and time parameters of transmitted signals (f_0, F_0, T_s).

Thus, an urgent scientific problem exists comprised of development of analysis of interference immunity of low frequency SCS and recommendations on its improvement under conditions of ionospheric disturbances resulting in occurrence of ionospheric formations with small-scale irregularities on the basis of monitoring of TEC fluctuations of ionosphere.

This problem can be solved on the basis of implementation of the following projects:

1) model of TEC variation (\bar{N}_r) in ionospheric formations with small-scale irregularities;

2) models of transionospheric communication channel with fading of various types allowing to determine fading parameters as a function of root-mean-square deviation (RMSD) of small-scale TEC fluctuations ($\sigma_{\Delta N_T} = (\overline{\Delta N_T^2})^{0.5}$) of ionosphere:

$$\{\gamma^2, S_4^2, F_\kappa\} = \psi(\sigma_{\Delta N_T}); \quad (3)$$

3) analysis of SCS interference immunity allowing to determine error probability as a function of RMSD of TEC fluctuations of ionosphere, parameters of transmitted signals and factor of their diverted reception (n_{div}):

$$P_{err} = \psi(h^2, \sigma_{\Delta N_T}, f_0, F_0, T_S, n_{div}); \quad (4)$$

4) RMSD monitoring of TEC fluctuations ($\sigma_{\Delta N_T}$) of ionosphere on the basis of GPStation-6 dual frequency receiver (GISTM class);

5) recommendations on improvement of operation quality of low frequency SCS on the basis of monitoring of ionospheric formations with small-scale irregularities.

2 Methods

2.1 Model of variation of total electron content in ionized formation with small-scale irregularities

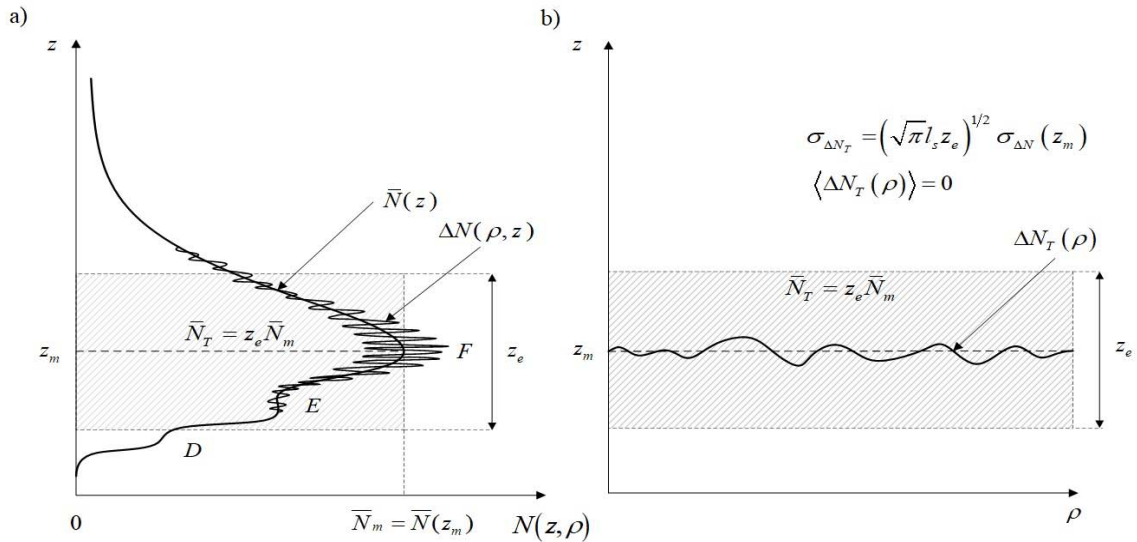


Figure 1. a) variation of electron concentration in ionosphere formation by small-scale irregularities along the height (z) and space ($\rho = x, y$); b) model of ionosphere in the form of thick homogeneous layer and thin layer of TEC irregularities.

Statistical properties of small-scale TEC fluctuations are described by zero average $\overline{\Delta N_T(\rho)} = 0$ and RMSD, which at Gauss spectrum of irregularities with characteristic (average) scale l_s is determined as [6, 8]:

$$\sigma_{\Delta N_T} = \left[\overline{\Delta N_T(\rho)^2} \right]^{0.5} = \left(\sqrt{\pi} l_s z \right)^{0.5} \sigma_{\Delta} (z), \quad (7)$$

where $\sigma_{\Delta N}(z_m)$ is the RMSD fluctuations of electron concentration at the height z_m of maximum ionization of ionosphere.

According to Figure 1a and Eqs. (5, 6), the mathematical model of ionosphere containing ionospheric formation with small-scale irregularities can be presented in the form of combination (Figure 1b) of: 1) thick homogeneous layer with the thickness z_e

It is known [6, 8] that variation of electron concentration in ionospheric formations with small-scale irregularities along the height (z) and space ($\rho = x, y$) is described as follows:

$$N(z, \rho) = \overline{N}(z) + \Delta N(z, \rho), \quad (5)$$

where $\Delta N(z, \rho)$ is the small-scale fluctuations of electron concentration with regard to variation along height of average (background) electron concentration $\overline{N}(z)$ in ionosphere (Figure 1a). According to Eq. (5), spatial variations of TEC upon vertical transionospheric RWP from SC (at the height of z_{Es}) to on land SCS receiver are determined as follows:

$$N_T(\rho) = \int_0^{z_p} N(z, \rho) dz \approx \int_0^{z_p} \overline{N}(z) dz + \Delta N_T(\rho) \approx \overline{N}_T + \Delta N_T(\rho) \equiv \overline{N}_T + \Delta N_T, \quad (6)$$

where $\overline{N}_T = \int_0^{z_p} \overline{N}(z) dz = \overline{N}_m z_e$ is the average TEC of ionosphere; $\overline{N}_m = \overline{N}(z_m)$ is the maximum average electron concentration in ionosphere at the height of $z = z_m$ (Figure 1a); z_e is the equivalent thickness of homogeneous atmosphere with electron concentration \overline{N}_m (at normal ionosphere $\overline{N}_m \approx 10^{12} \text{ el/m}^3$); $\Delta N_T(\rho) = \int_0^{z_p} \Delta N(z, \rho) dz \equiv \Delta N_T(\rho) \equiv \Delta N_T$ is the spatial small-scale TEC fluctuations in ionosphere with small-scale irregularities of electron concentration $\Delta N(z, \rho)$.

$$\sigma_{\Delta N_T} = \left(\sqrt{\pi} l_s z_e \right)^{1/2} \sigma_{\Delta N}(z_m)$$

$$\langle \Delta N_T(\rho) \rangle = 0$$

characterized by average TEC $\overline{N}_T = \overline{N}_m z_e$; 2) thin layer of irregularities positioned at the height of ionization maximum z_m and characterized by average $\overline{\Delta N_T(\rho)} = 0$ and RMSD (7) $\sigma_{\Delta N_T} \sim \sigma_{\Delta N}(z_m)$.

2.2 Models of transionospheric communication channel with fading of various types

On the basis of ionosphere model (Figure 1b), two models of transionospheric RWP were developed (Figure 2) [6, 8, 9]. The first model (Figure 2a) is based on the concept of multiple beams formed on the surface of thin layer of TEC irregularities (phase screen) $\Delta N_T(\rho) \equiv \Delta N_T(\rho_i)$ and coming to the receiver point with relative phase shifts $\Delta \phi_i \sim \Delta N_T(\rho_i) / f_0$.

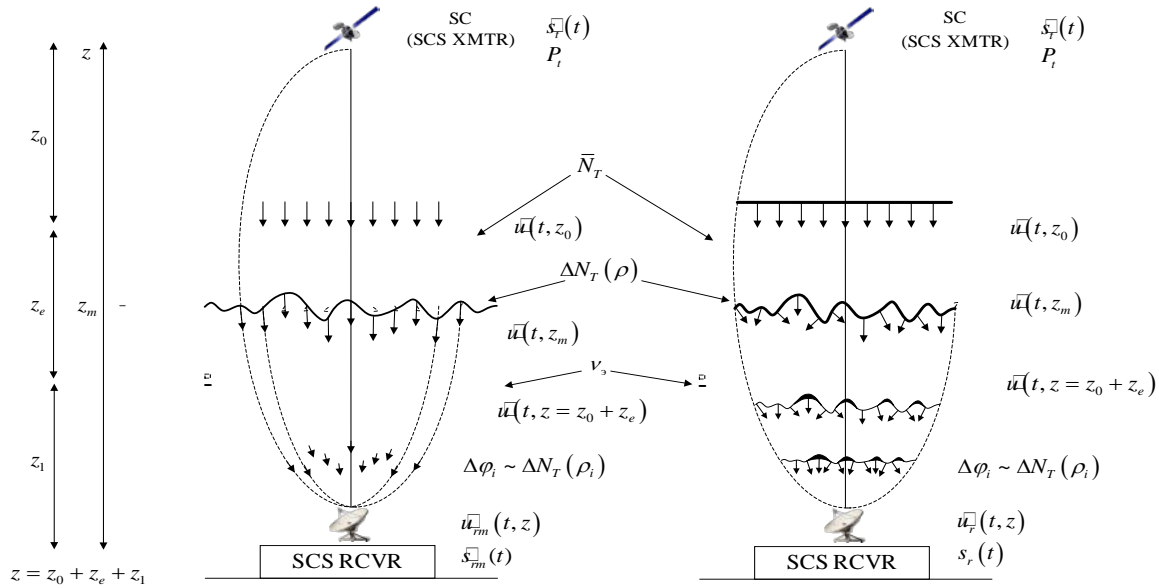


Figure 2. Models of transionospheric RWP based on concepts of multipath propagation (a) and diffraction (b) of wave on ionosphere irregularities.

On this basis equations were derived for complex signal at receiver input $\bar{s}_m(t, z)$ and average power of received signal [6, 8, 9]:

$$\bar{P}_r = \bar{P}_t K_{att} |\bar{K}|^2 = P_{div} + \bar{P}_n \bar{K}_{reg}^2 + P_{att} \bar{K}_{att}^2 \sigma_{att}^2 \quad (8)$$

where K_{att} was the coefficient of power attenuation of transmitted signal P_t in transionospheric communication channel without irregularities and multipath propagation (that is, with accounting for attenuation in free space and absorption in ionosphere). Dispersion of module of normalized transmittance factor of transionospheric multipath communication channel is described as follows:

$$|\bar{K}|^2 = \left| \sum_{i=1}^M \exp(-j\Delta\varphi_i) \right|^2 = \left| \sum_{i=1}^M \exp(-j80.8\pi\Delta N_T(\rho_i)/cf_0) \right|^2 = \alpha_{reg}^2 + 2\sigma_e^2 \quad (9)$$

Analysis of Eq. (9) demonstrates that the regular α_{reg}^2 and fluctuation $2\sigma_e^2$ constituents of the transmittance factor of transionospheric multipath communication channel depend on small-scale TEC fluctuations of ionosphere $\Delta N_T(\rho_i)$. However, in the frames of development of multipath models of transionospheric communication channel it is impossible to obtain analytical expressions of the constituents $\alpha_{reg}^2 = \psi(\sigma_{ANr}/f_0)$ and $2\sigma_e^2 = \psi(\sigma_{ANr}/f_0)$ of normalized transmittance factor as a function of RMSD small-scale TEC fluctuations of ionosphere (7) $\sigma_{ANr} = [\Delta N_T(\rho)^2]^{0.5}$ and selection of carrier frequency in SCS (f_0) from Eq. (9) for $|\bar{K}|^2$. This problem can be solved by the methods of statistical radio physics describing wave diffraction on irregularities of ionosphere in addition to transionospheric RWP (Figure 2b).

The method of phase screen is the simplest, it determines average intensity ($\bar{I}_r = I_{reg} + I_n$) of wave field at input of receiving antenna $\bar{u}_m(t, z)$ as well as its regular (I_{reg}) and fluctuation (I_n) constituents according to Eqs. [6, 8, 9]:

$$\bar{I}_r(z) = I_{reg}(z) + I_n(z) = A_0^2(z) \exp(-\sigma_\varphi^2) + A_0^2(z) [1 - \exp(-\sigma_\varphi^2)] = A_0^2(z) = P_t K_{att}(z) \quad (10)$$

where $A_0(z) = \sqrt{P_t K_{att}(z)}$ is the amplitude in the front of received wave without scintillations determined by the coefficient of

power attenuation of transmitted signal of emitted wave $K_{att}(z)$ in free space and due to absorption in ionosphere; σ_φ is the RMSD fluctuations of phase $\Delta\varphi(z_m, \rho_i) = \Delta\varphi_i$ in the wave front at outlet of heterogeneous ionospheric layer (phase screen) determined by RMSD σ_{ANr} TEC fluctuations $\Delta N_T(\rho)$ of ionosphere as [6]:

$$\sigma_\varphi = (\Delta\varphi_i^2)^{0.5} = 80.8\pi [\Delta N_T(\rho)^2]^{0.5} / cf_0 = 80.8\pi\sigma_{ANr} / cf_0 \quad (11)$$

According to Eq. (10), the average signal power at the outlet of receiving antenna (that is, at inlet of SCS receiver) is determined as:

$$\bar{P}_r = P_{div} + P_n = \alpha_{reg}^2 P_t K_{att} + 2\sigma_e^2 P_t K_{att} = \exp(-\sigma_\varphi^2) P_t K_{att} + [1 - \exp(-\sigma_\varphi^2)] P_t K_{att} = P_t K_{att} \quad (12)$$

Comparative analysis of Eqs. (8) and (12) for average signal power (\bar{P}_r) at outlet of SCS receiver obtained by multipath and radio physical methods confirms their identity. Hence, it is possible to write equations for regular α_{reg}^2 and fluctuation $2\sigma_e^2$ constituents of transmittance coefficient of transionospheric communication channel in the form of [6, 8, 9]:

$$\alpha_{reg}^2 = \exp(-\sigma_\varphi^2); \quad 2\sigma_e^2 = [1 - \exp(-\sigma_\varphi^2)] \quad (13), (14)$$

as a function of RMSD small-scale TEC fluctuations of ionosphere σ_{ANr} in terms of RMSD fluctuations of phase at outlet of ionospheric phase screen (11) $\sigma_\varphi = 80.8\pi\sigma_{ANr}/cf_0$.

According to Eqs. (2, 12-14), the required Eq. (6) $\gamma^2 = \psi(\sigma_{ANr})$ of parameter of Rician distribution of fading as a function of RMSD small-scale TEC fluctuations is as follows:

$$\gamma^2 = P_{reg}/P_n = \alpha_{reg}^2 / 2\sigma_e^2 = 1 / [\exp(\sigma_\varphi^2) - 1] = [\exp(80.8\pi\sigma_{ANr}/cf_0)^2 - 1]^{-1} \quad (15)$$

Index of ionospheric scintillations S_4 is related with σ_{ANr} as follows [10]:

$$S_4^2 = 1 - \left[\frac{\alpha_{reg}^2}{\alpha_{reg}^2 + 2\sigma_e^2} \right]^2 = 1 - \left(\frac{\alpha_{reg}^2}{\alpha_{reg}^2 + 2\sigma_e^2} \right)^2 = 1 - \left[\frac{\exp(-\sigma_\varphi^2)}{1 - \exp(-\sigma_\varphi^2)} \right]^2 = 1 - \exp(-2\sigma_\varphi^2) = 1 - \exp\left[-2(80.8\pi\sigma_{ANr}/cf_0)^2\right] \quad (16)$$

According to Eqs. (15) and (16), increase in RMSD TEC fluctuations ($\sigma_{\Delta N_T}$) upon transionospheric RWP leads to increase in RMSD fluctuations of phase in wave front at outlet of phase screen (11) $\sigma_\phi \sim \sigma_{\Delta N_T}/f_0$ and increase in the fading depth of received signals: $\gamma^2 = P_{\text{res}}/P_{\text{fl}} \rightarrow 0$, $S_4^2 \rightarrow 1$.

Moreover, the increase in $\sigma_\phi \sim \sigma_{\Delta N_T}/f_0$ stipulates narrowing of coherence band of transionospheric communication channel as follows [9]:

$$F_c \approx f_0/\sqrt{2}\sigma_\phi = f_0/\sqrt{2}\sigma_\phi = cf_0^2/80.8\pi\sqrt{2}\sigma_{\Delta N_T}. \quad (17)$$

According to Eq. (17), increase in RMSD TEC fluctuations upon transionospheric RWP ($\sigma_{\Delta N_T}$) and fluctuations of phase in wave front at outlet of phase screen (18) $\sigma_\phi \sim \sigma_{\Delta N_T}/f_0$ leads to decrease in coherence band $F_c \sim f_0^2/\sigma_{\Delta N_T}$ of fading in transionospheric communication channel.

It should be mentioned that Eqs. (15-17) were obtained for the case of vertical ($\theta_0 = 0$) transionospheric RWP (Figure 2). In the case of inclined RWP via ionosphere at the angle $\theta_0 > 0$, the equivalent thickness of ionosphere z_e and the distance to reception point (z, z_m, z_1) increase to $z'_e = z_e \sec \theta_0$; $z' = z \sec \theta_0$; $z'_m = z_m \sec \theta_0$; $z'_1 = z_1 \sec \theta_0$, and RMSD fluctuations of phase in the screen increase to $\sigma_\phi = 80.8\pi\sigma_{\Delta N_T} \sqrt{\sec \theta_0}/cf_0$.

Therefore, the required Eq. (3) $\{\gamma^2, S_4^2, F_c\} = \psi(\sigma_{\Delta N_T})$ of parameters of signal fading in transionospheric communication channel as a function of RMSD small-scale TEC fluctuations of ionosphere is obtained in the form of analytical expressions (15-17).

2.3 Analysis of SCS interference immunity under conditions of ionospheric formations with small-scale irregularities

The generalized expression is known [6] for estimation of interference immunity of noncoherent reception of orthogonal signals in transionospheric communication channels with various depth of overall fading and degree of FSF and ISI:

$$P_{\text{err}} = 0.25(P_{111} + P_{110} + P_{011} + P_{010}), \quad (18)$$

where P_{alc} is the partial value of probability of erroneous reception of symbol 1 upon transmittance of the sequence of data

symbols alc (where $a, c = 0$ or 1, that is, 111, 110, 011, 010) via symmetric communication channel with fading determined as follows:

$$P_{\text{alc}} = \frac{\gamma^2 + 1}{W_{\text{alc}} + 2(\gamma^2 + 1)} \exp\left[-\frac{\gamma^2 W_{\text{alc}}}{W_{\text{alc}} + 2(\gamma^2 + 1)}\right], \quad (19)$$

where γ^2 is the Rician parameter, W_{alc} is the average signal/noise ratio at output of noncoherent reception system upon recording of central symbol 1 determined for each sequence of the transmitted symbols alc . For transionospheric communication channel, the dependence $\gamma^2 = \psi(\sigma_{\Delta N_T}/f_0)$ is determined by Eq. (15), and $W_{\text{alc}} = \psi(h^2, \eta_t, \eta_{\text{is}})$ depends on inlet signal/noise ratio (h^2) and coefficient of energy loss upon processing of signals from FSF (η_t) and ISI (η_{is}):

$$W_{111} = h^2 \eta_t \eta_{\text{is}}; \quad W_{110} = W_{011} = \frac{h^2 \eta_t \eta_{\text{is}} - h^2 \eta_t \eta_{\text{is}}}{1 + h^2 \eta_t \eta_{\text{is}}};$$

$$W_{010} = \frac{h^2 \eta_t \eta_{\text{is}} - 2h^2 \eta_t \eta_{\text{is}}}{1 + 2h^2 \eta_t \eta_{\text{is}}}. \quad (20), (21), (22)$$

These losses depend on the degree of FSF ($\eta_t = \psi(F_0/F_c)$) and ISI ($\eta_{\text{is}} = \psi(1/T_s F_c)$) of received signals as follows:

$$\eta_t = \left[1 + \frac{1}{2\pi^2} \left(\frac{F_0}{F_c}\right)^2\right] \operatorname{erf}\left(\frac{\pi F_0}{F_c}\right) - \frac{1}{\pi\sqrt{\pi}} \left(\frac{F_0}{F_c}\right) \left\{2 - \exp\left[-\left(\frac{\pi F_0}{F_c}\right)^2\right]\right\} \leq 1; \quad (23)$$

$$\eta_{\text{is}} = \frac{1}{2\pi^2} \left(\frac{1}{T_s F_c}\right)^2 \operatorname{erf}(\pi T_s F_c) - \frac{1}{\pi\sqrt{\pi}} \left(\frac{1}{T_s F_c}\right) \exp[-(\pi T_s F_c)^2] \geq 0, \quad (24)$$

where the coherence band of transionospheric communication channel depends on RMSD TEC of ionosphere according to Eq. (17): $F_c \sim f_0^2/\sigma_{\Delta N_T}$.

According to Eqs. (18–24), Figure 3 illustrates estimations of interference immunity of signal reception ($P_{\text{err}} = \psi(h^2)$) in Gonets-D1M low frequency SCS (for $f_0 = 387$ MHz, $F_0 = 1024$ kHz, $R_T = 1024$ Kbit/s, $\theta_0 = 60^\circ$) during increase in RMSD TEC from $\sigma_{\Delta N_T} = 10^{13}$ el/m² in normal ionosphere to $\sigma_{\Delta N_T} = 10^{16}$ el/m² in ionospheric formation with small-scale irregularities.

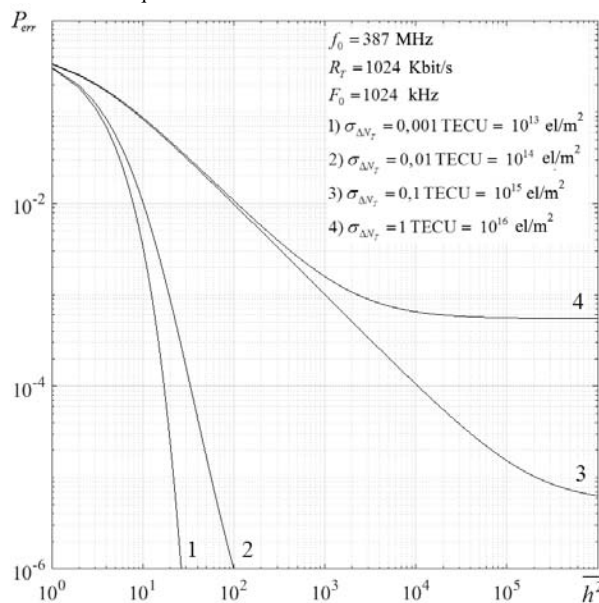


Figure 3. Estimation of interference immunity of Gonets-DIM SCS upon growth of TEC fluctuations in ionospheric formation with small-scale irregularities.

While preventing fading in SCS using conventional methods of diverted reception by several (n) branches, the probability of error $P_{err}(n) = P_{err(n)}$ can be determined irrespectively of diversion type using the known [11] approximated expression (at $h^2 \gg 1$ and without fading correlation in diversion branches) as follows:

$$P_{err(n)} \approx C_{2n-1}^n P_{err(1)}^n = [(2n-1)!/n!(n-1)!] P_{err(1)}^n, \quad (25)$$

where $P_{err(1)} = P_{err}$ is the probability of erroneous signal reception in one diversion branch determined in this case by Eqs. (18-24). It should be mentioned that the signal/noise ratio at receiver inlet h^2 in each of n diversion branches depends on their total number and diversion type as follows [11]: $\overline{h^2(n)} = \overline{h^2}/n^\alpha$. In this case the coefficient α characterizes receiver power distribution between parallel channels and is $\alpha=0$ upon spatial diverted reception, $\alpha=1$ upon time diversion, and $1 < \alpha < 2$ upon frequency diversion. Then the equations for estimation of partial signal/noise ratio, Eqs. (20-22), W_{elc} at outlet of noncoherent circuit of signal processing in each of n diversion branches are as follows:

$$W_{111} = h^2 \eta_r \eta_d / n^\alpha; \quad W_{110} = W_{011} = \frac{(h^2 \eta_r \eta_d - h^2 \eta_s \eta_d)}{(n^\alpha + h^2 \eta_s \eta_d)}; \\ W_{010} = \frac{(h^2 \eta_r \eta_d - 2h^2 \eta_s \eta_d)}{(n^\alpha + 2h^2 \eta_s \eta_d)}. \quad (26)$$

Therefore, the required Eq. (4) of SCS quality as a function of RMSD TEC fluctuations of ionosphere and parameters of transmitted signals $P_{err} = \psi(h^2, \sigma_{\Delta N_T}, f_0, F_0, T_s, n_{div})$ are obtained in the form of analytical Eqs. (18-24) upon conventional single reception of signals ($n \equiv n_{div} = 1$) and in form of Eqs. (18-26) at arbitrary order ($n \equiv n_{div} \geq 2$) and type ($\alpha = 0..2$) of diversion.

2.4 Monitoring of TEC fluctuations of ionosphere based on improved GPStation-6 receiver (GISTM class)

At present the most perfect receiver of satellite navigation systems (SNS) of GISTM class is the receiver of GPStation-6 which facilitates monitoring of current TEC of ionosphere N_T [12]. The monitoring method of TEC of ionosphere implemented in the GPStation-6 receiver is illustrated in Figure 4. Its essence is as follows. Navigation spacecraft (NSC) transmits navigation signals simultaneously at two carrier frequencies: $f_1 \approx 1.6$ GHz and $f_2 \approx 1.2$ GHz. Upon RWP via ionosphere with small-scale irregularities and fluctuations of TEC determined by Eq. (6) $N_T = \overline{N_T} + \Delta N_T$, the delay in time (pseudo-delay) and phase

(pseudo-phase) of signals at receiver inlet will be random and depend on frequency [13]:

$$\tau_1 \sim (\overline{N_T} + \Delta N_T) / f_1^2; \quad \tau_2 \sim (\overline{N_T} + \Delta N_T) / f_2^2; \quad (27)$$

$$\varphi_1 \sim (\overline{N_T} + \Delta N_T) / f_1; \quad \varphi_2 \sim (\overline{N_T} + \Delta N_T) / f_2. \quad (28)$$

In GPStation-6 dual frequency receiver, GISTM class, on the basis of code measurements (that is, pseudo-delays τ_1 and τ_2) and solution of Eq. (27), the TEC is determined in radio line from NSC to dual-frequency receiver [11]:

$$N_T = \psi(\tau_1, \tau_2) = \overline{N_T} + \Delta N_T + \delta_{inst}. \quad (29)$$

where δ_{inst} is the instrumental noise error of TEC measurements.

The main disadvantages of the GPStation-6 dual-frequency receiver upon standard operation mode are as follows:

- 1) TEC of ionosphere is determined on the basis of dual-frequency code measurements (27), hence, it contains noise instrumental error equaling to $\delta_{inst} \gg \Delta N_T$ (stipulating noise pollution of small-scale TEC fluctuations);
- 2) discretization frequency of detection of TEC of ionosphere by GPStation-6 receiver is 1 Hz which facilitates detection of RMSD TEC fluctuations stipulated by irregularities of electron concentration with minimum average sizes $l_s \approx 1500$ m (whereas signal fading in satellite radio systems is caused by small-scale irregularities with the sizes of not higher than 200...400 m).

In order to eliminate the instrumental error δ_{inst} , it is required to modify the monitoring method of TEC of ionosphere implemented in GPStation-6 receiver by adding the following units (indicated by dashed lines in Figure 4): detection of TEC by code measurements; detection of TEC by phase measurements; their combinations; determination of statistic properties of TEC fluctuations.

Combinations of code $N_T = \psi(\tau_1, \tau_2)$ and phase $N_T = \psi(\varphi_1, \varphi_2)$ measurements of TEC makes it possible to eliminate both instrumental error (δ_{inst}) and peculiar for phase measurements uncertainty ($\delta \overline{N_T}$) of average TEC ($N_T = \psi(\varphi_1, \varphi_2) = \overline{N_T} + \delta \overline{N_T} + \Delta N_T$) [13]. Therefore, the results of combination of TEC in radio line from NSC to dual-frequency RCVR will be as follows:

$$N_T = \psi(\tau_1, \tau_2, \varphi_1, \varphi_2) = \overline{N_T} + \Delta N_T. \quad (30)$$

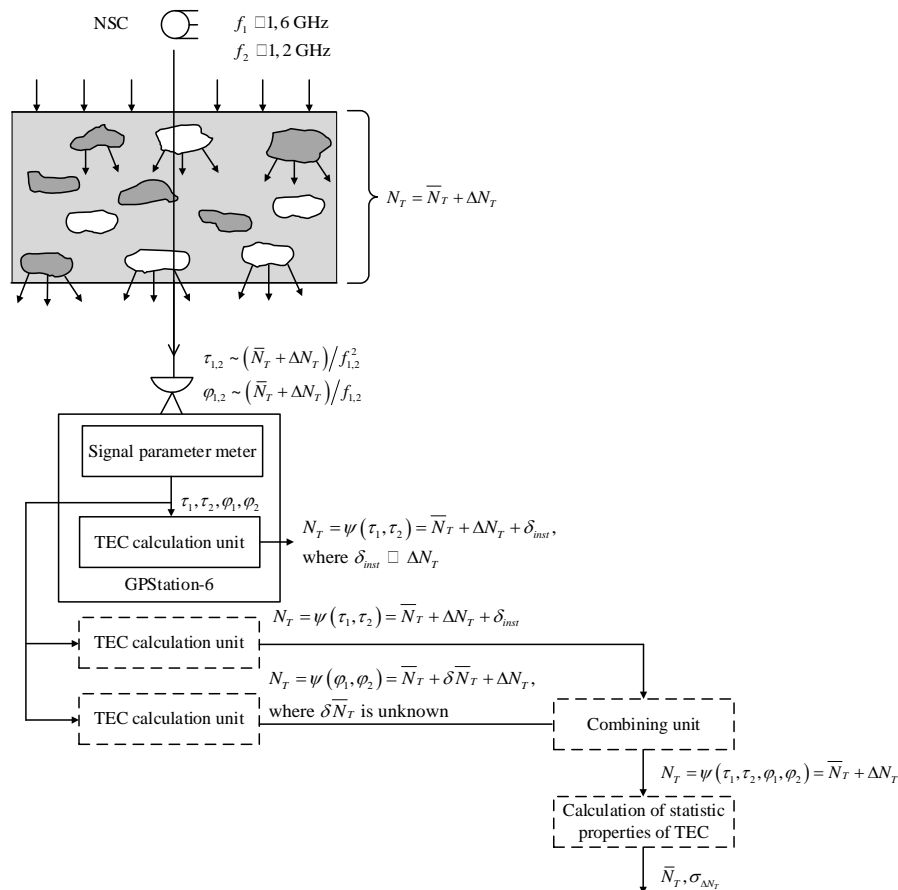


Figure 4. GPS monitoring of ionospheric TEC implemented in GPStation-6 receiver and its modification (dashed line).

In order to highlight small-scale TEC fluctuations (ΔN_T) with the required sizes ($l_s \approx 10 \dots 400$ m) and to separate them from medium range fluctuations ($l_s > 400$ m) and noises, it is necessary [14, 15]:

- 1) to increase discretization frequency of TEC detection from 1 Hz to 50 Hz which would allow to determine RMSD small-scale TEC fluctuations (stipulated by irregularities of electron concentration with the average sizes of $l_s \approx 30 \dots 300$ m);
- 2) to develop procedure of separation of small-scale TEC fluctuations from medium scale fluctuations (included in \bar{N}_T) and noises.

In order to solve the aforementioned problems, the algorithm was developed for determination of RMSD small-scale TEC fluctuations upon occurrence of ionospheric formations with small-scale irregularities [13-15]. At the first stage TEC is determined by dual frequency code ($N_T = \psi(\tau_1, \tau_2)$) and phase ($N_T = \psi(\phi_1, \phi_2)$) measurements with the discretization frequency of 50 Hz. This is aided by the fact that the GPStation-6 receiver is capable to measure parameters of navigation radio signals (pseudo-distances $\tau_{1,2}$ and pseudo-phases $\phi_{1,2}$) with the discretization frequency of $f_d = 50$ Hz. However, the software of this receiver provides messages in ISMRAWTEC format with

minimum discretization frequency of only $f_d = 1$ Hz. At the same time, the GPStation-6 receiver is capable to use messages in RANGE format, which facilitates measurements of pseudo-distance and pseudo-phase by signals of all visible NSC with minimum discretization frequency of $f_d = 50$ Hz. Then these data can be applied to detection of TEC of ionosphere by code $N_T = \psi(\tau_1, \tau_2)$ and phase $N_T = \psi(\phi_1, \phi_2)$ measurements. At the second stage, using combination of $N_T = \psi(\tau_1, \tau_2)$ and $N_T = \psi(\phi_1, \phi_2)$, TEC is detected with the discretization frequency of 50 Hz by Eq. (30) $N_T = \psi(\tau_1, \tau_2, \phi_1, \phi_2) = \bar{N}_T + \Delta N_T$. At the third stage, in order to separate small-scale TEC fluctuations (ΔN_T) from its average (background) value TEC (\bar{N}_T), the Butterworth filter of the 6th order is applied [15, 16]. At the fourth stage the obtained results of ΔN_T detection are used for prediction of RMSD small-scale TEC fluctuations $\sigma_{\Delta N_T}$.

3 Results

The Figure 5 illustrates the principle of SCS, which improves operation quality under ionospheric disturbances based on monitoring of RMSD small-scale TEC fluctuations in ionospheric formations with small-scale irregularities and adaptation of transmitted signals.

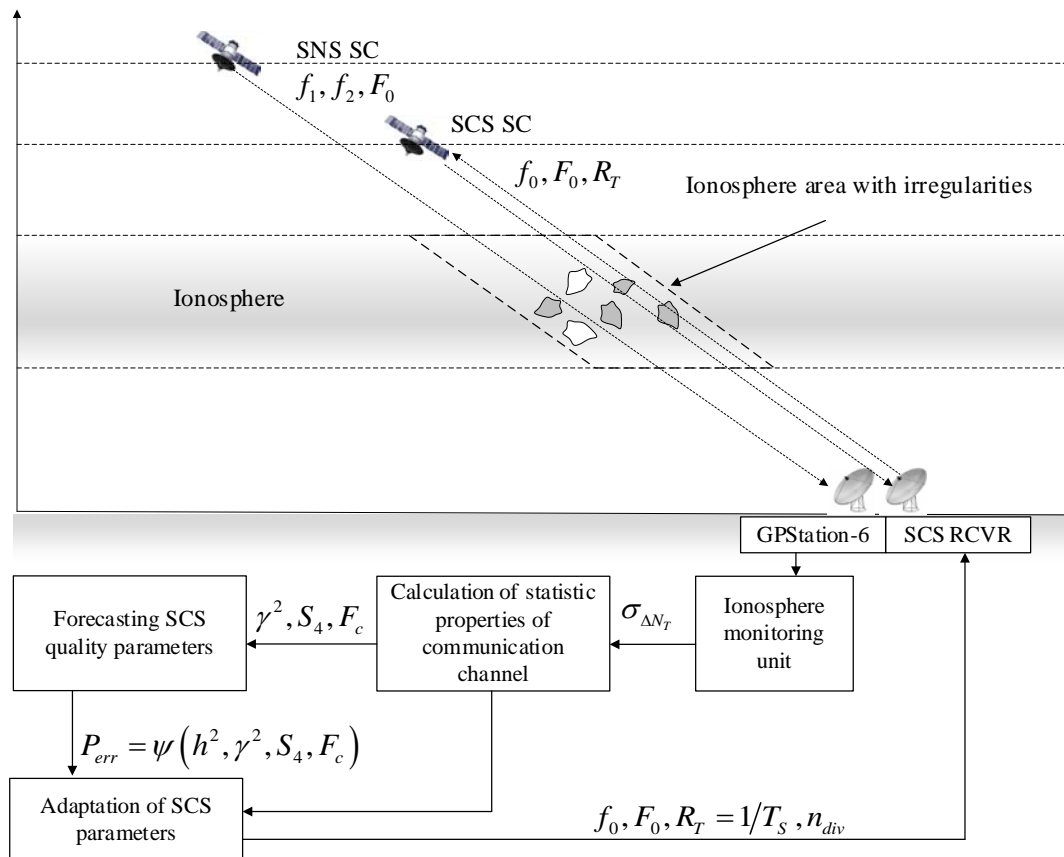


Figure 5. SCS development on the basis of GPS monitoring of TEC fluctuations in ionospheric formation with small-scale irregularities and adaptation of transmitted signals.

The main recommendations on improvement of SCS operation quality under conditions of ionospheric formations with small-scale irregularities are as follows:

1. Prior to satellite communication session, it is necessary to monitor ionosphere using modified dual-frequency SSN receiver with evaluator of RMSD small-scale TEC fluctuations ($\sigma_{\Delta N_r}$) in SCS radio line according to the developed algorithm.
2. On the basis of monitoring results $\sigma_{\Delta N_r}$, the evaluator of statistical properties of fading calculates parameters of fading depth (γ^2, S_4^2) and coherence band (F_c) of transionospheric communication channel at preset frequency and time parameters ($f_0, F_0, R_T = 1/T_s$) of transmitted signals according to Eqs. (15-17).
3. The unit of predictions of SCS quality estimates probability of erroneous reception ($P_{err} = \psi(h^2, \sigma_{\Delta N_r}, f_0, F_0, T_s, n_{div})$) at preset signal/noise ratio (h^2), fading parameters (γ^2, S_4^2, F_c), and diversity factor (n_{div}) according to Eqs. (18-26).
4. If the error probability is at least the allowable value ($P_{err} \leq P_{err\ all}$), then it is possible to start satellite communication. Otherwise, ($P_{err} > P_{err\ all}$), it is required to start adaptation of satellite communication.

5. In the unit of adaptation of SCS parameters on the basis of $P_{err} = \psi(h^2, \sigma_{\Delta N_r}, f_0, F_0, T_s, n_{div})$, the signal parameters (f_0, F_0, T) and diversity factor (n_{div}) are selected providing the required communication quality ($P_{err} \leq P_{err\ all}$) upon increase in $\sigma_{\Delta N_r}$ under conditions of ionospheric formations with small-scale irregularities.
6. Transmit/receive facility of on land SCS station transmits data on adaptation of parameters of transmitted signals f_0, F_0, T to SCS SC and necessity to apply diverted reception with the required order (n_{div}).

Figure 6 exemplifies possibility to increase interference immunity of Gonets-D1M low frequency SCS under conditions of ionospheric formations with small-scale irregularities on the basis of adaptation of transmittance rate, spectrum bandwidth of transmitted signals and their diverted reception with the factor $n_{div} = 4, 6, 8$ according to Eqs. (18-26) [16].

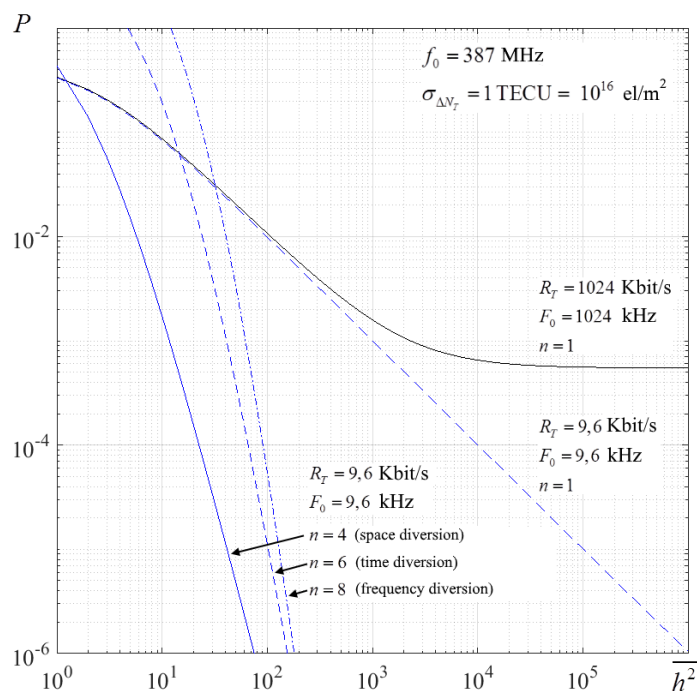


Figure 6. Improvement of SCS interference immunity under conditions of ionospheric formations with small-scale irregularities based on adaptation of transmittance rate, signal spectrum width, and their diversity reception with the factor of $n_{div} = 4, 6, 8$.

Comparative analysis of the plots in Figures 3 and 6 demonstrates possibility to provide allowable interference immunity in Gonet-DIM low frequency SCSA ($P_{err} \leq P_{err all} = 10^{-5}$ at achieved maximum signal/noise ratio $h^2 = 200 = 23$ dB) under conditions of strong disturbances (increase in RMSD TEC fluctuations in ionospheric formation with small-scale irregularities to $\sigma_{\Delta N_T} = 10^{16}$ el/m²) in two stages: 1) elimination of ISI and FSF by decrease in transmittance rate (from $R_T = 1/T_S = 1024$ Kbit/s to 9.6 Kbit/s) and band width to $F_0 = 9.6$ kHz); 2) application of diverted reception of signal with the factor of $n_{div} = 4$ (space diversion), or $n_{div} = 6$ (time diversion), or $n_{div} = 8$ (frequency diversion).

4 Conclusion

The method of analysis of interference immunity of low frequency SCS has been developed under the conditions of ionospheric disturbances causing occurrence of ionospheric formations with small-scale irregularities. On the basis of determination of RMSD small-scale TEC fluctuations of ionosphere ($\sigma_{\Delta N_T}$), and using modified dual-frequency receiver of GPStation-6 satellite navigation system, it allows to estimate error probability $P_{err} = \psi(h^2, \sigma_{\Delta N_T}, f_0, F_0, T_S, n_{div})$ upon noncoherent reception of signals with preset frequency and time parameters (f_0, F_0, T_S) and diversity order (n_{div}) as well as to present recommendations on improvement of SCS interference immunity to allowable levels ($P_{err all} = 10^{-5}$ at signal/noise ratio equaling to $h^2 = 23$ dB).

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