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## AD ALTA: JOURNAL OF INTERDISCIPLINARY RESEARCH

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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

# STUDYING THE ROLE OF MANAGERS' CULTURAL INTELLIGENCE IN THE SELECTION OF THEIR DECISION-MAKING STYLE (CASE STUDY: WATER AND SEWAGE ORGANIZATION IN MASHHAD)

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**Abstract:** This investigation has been conducted with the aim of studying the relationship between cultural intelligence and managers' decision-making style in Mashhad water and sewage organization. The Statistical population of the study consists of 53 managers and assistants in Mashhad water and sewage organization that has been elected through census and the data has been collected and analyzed through a questionnaire of approved validity and reliability. Results of Pearson correlation coefficient at  $p = 0.05$  level of significance, indicated that all the components of cultural intelligence except for the motivational component have a significant and direct relationship with managers' decision-making styles and in cultural intelligence behavior and cultural intelligence strategy components this relationship is more intense.

**Keywords:** cultural intelligence, Decision-making style, Early & Ang model, Scott & Bruce model

## 1 Introduction

Due to turbulent and competitive environment, many organizations of 21st century have been multicultural. Today's work environment requires people to be familiar with different cultures and Can communicate with other cultures for this purpose, need of cultural intelligence CI is felt. Cultural intelligence is the new range of intelligence which has great relationship with various working environments. Cultural intelligence allows people to recognize how others think and How to respond to patterns of behavior and thus reduce communication barriers and Gives people the power to manage cultural diversity (Early & Ang, 2003). In diverse work environments in present century, it is necessary to be appropriately managed stresses caused by culture shock and disorders, and the consequences of cultural conflict. Some aspects of culture are easy to see. Obvious factors such as art, music and behavioral style of these examples. But the most challenging part of culture is hidden. Beliefs, values, expectations, attitudes and assumptions are elements of culture which are not seen but affect on people behavior and sometimes are led to conflict and working contradictions. For this purpose, is required to adaptation and adjustment effective cultures. One factor that is very considered and has been dubbed as a moderating factor is cultural intelligence. Cultural intelligence is the key to success in today's world. In order to effective performance of working groups, group should develop cultural intelligence. Heterogeneous groups than mono-cultural groups, have greater success and failure potential. Trick that they should be used, is to maximize the positive effects of cultural diversity and minimize its negative effects. With increasing cultural intelligence, directors and members of the group can be the basis for mutual understanding and respect and enhance the ability of individuals to identify solutions for their own problems (Early & Ang, 2003). Along with cultural intelligence, theories and styles of management in the path of its evolution, have changed Organizations and human and material resources. The most important of these theories and styles, are classical theories, neoclassical (human relations school), the system, contingent and styles of grammatical, persuasive, participatory and devolution. Change the position and expectations of today's organizations requires that pay more attention to theories and styles of management and the role of managers as most important factor of change and creativity and innovation, and making the best decisions in critical situations. For example, organization that has organic structure and takes advantage Participatory management style and system theory compared to organization that have Mechanical and bureaucratic structure, and grammatical style and classical theory, have more emphasis on innovation and improve the quality of goods and services and better suited to the needs of the consumer (Early & Ang, 2003). Managers with having cultural intelligence can be

effective in the choice of decision-making style. Hence cultural intelligence has become increasingly important in today's competitive world. However truly, what managers are successful? Crucial issue appears to be discussed is the effect of a variable called cultural intelligence on management styles of managers in decision-making (Early & Ang 2003).

In this research given the importance of cultural intelligence that we want to answer the question:

What the role of cultural intelligence of managers in their decision making styles in Water and Wastewater Organization of Mashhad is?

## 2. Research theoretical Foundations

### 2.1 Culture

Hofstede believes, organizational culture is set of assumptions, beliefs and values of the organization's members which distinguish specific pattern of Organizational behavior and organization from other organizations as distinguishes their individual character from others, and distinguishes the culture of an organization or community from other communities that have their own unique culture, Each organization has its own culture (Gholipour, 2001).

### 2.2 Cultural Intelligence

Peterson (2004), defined CQ as the talent to apply skills and competences in different environments. Afferman (2004) points out that cultural intelligence is high intelligence which contains various forms of intelligence and (IQ) is only one of them (Green & Hill, 2005).

### 2.3 Cultural intelligence components

Early & Ang (2003) and Wein Dyne (2005) discusses Cultural intelligence includes four components as follows:

**2.3.1 Metacognitive components of cultural intelligence (strategy):** is a method in which a person argues intercultural experiences through that. Cultural intelligence strategy means that the person how understands cross-cultural experiences. This strategy represents processes that people use to learn and understand cultural knowledge.

**2.3.2. Cognitive component of cultural intelligence (knowledge):** is knowledge of a person about similarities and differences in culture and reflects general knowledge about culture (For example, information about religious beliefs and spiritual and values and beliefs about work, Time, family relations, customs and language).

**2.3.3 Motivational components:** Confidence and trust in person that is able to adapt to a new culture. Motivational components of cultural intelligence, shows capacity and energy for people to interact effectively in a new cultural. Motivational dimension of cultural intelligence involves level in which people have trust and confidence about their capabilities in cross-cultural interactions and is the degree of openness to experience; interact with people from other cultures and levels of satisfaction that finds from those interactions.

**2.3.4 Behavioral components:** show individual capability to display acts of appropriate verbal and nonverbal in interactions with people from different cultures (Early & Mosakofsky 2004). This element of cultural intelligence focuses on this which people while placed in new culture how they act (open acts of person) intelligence, behavioral culture, refers to the ability of person to perform appropriate reaction.

**2.3.5 Decision-making style:** decision making styles in terms of conceptual represents type of behavior and performance of people when faced with decision conditions. Decision making style represents habitual patterns that they use when making decisions. In other words, decision making styles of each individual are approach of his character in understand and respond to decision-make task (Hadi zade & Tehrani, 2008).

## 2.4 Types of Decision-making styles

**2.4.1 Rational decision-making style:** in this style of decision-making, person aware of all solutions and knows that any decision leads to what conclusion and can Sort and organize results of decisions based on priority (most beneficial) maximize attainment of objectives by using an optimization strategy (Hoy & Miskel, 2008).

**2.4.2 Intuitive decision-making style:** Robbins (2005) believes that this style is unconscious decision-making process that is achieved in the light of deduced experience and is based on people's emotions and implicit learning and does not act apart from reasonable analysis, but these two complement each other.

**2.4.3 Dependent decision-making style:** This style conceptually, represents relying on decision makers to guidance and help of others when faced to the decision maker conditions. Those who enjoy this style because of poor awareness and lack of ability to get information from their environment during making decisions, depend completely on others (Hadi zade & Tehrani, 2008).

**2.4.4 Instantaneous decision-making style:** Indicates an emergency situation that person without the backing of previous thought, immediately adopt as soon as possible its original decision (scot & Brouce, 1995) It is possible this method of decision-making be disabled of conditions which are created to manager.

**2.4.5 Avoidant decision making styles:** According to Parker and his colleagues (2007) this style means, to postpone decisions during faced with difficulties and evasion of reaction to the occurred problem. In this way, decision-maker tends to avoid from any decision and seeks to avoid as much as possible of decision-making position (Hadi zade and Tehrani 2008).

## 3 Research Background

### 3.1 Research conducted in within the country

Kashkar et al, (2014) did a study entitled "Comparison of emotional intelligence and decision-making style, managers of physical education offices and other managers of Tehran University students". The results showed that emotional intelligence of Physical Education managers was higher than non- Physical Education managers but there were no significant difference between the styles of their decisions. Also emotional intelligence with rational decision-making style has Positive relationship and has inverse relationship with decision-making based on doubts.

Ghasemi & Medany, (2011)Conducted study entitled "explores the relationship between cultural intelligence and decision-making style middle schools managers "The results showed that There is a significant relationship between Cultural Intelligence of managers and public decision-making styles of middle schools managers in Qazvin Province and also There is a significant relationship between cultural intelligence of managers and Styles of rational, intuitive and instantaneous and a significant relationship was not observed Only between cultural intelligence and avoidant decision-making style.

Kazemi, (2008) in his thesis with the theme "The relationship between cultural intelligence and performance of Mustafa Alalamieh community workers" has been carried out. Results obtained of Spearman correlation test showed that there is a relationship between cultural intelligence and performance, dimensions of cultural intelligence (Metacognitive, cognitive,

motivational, and behavioral) and employee performance. Priority aspects of cultural intelligence of Mustafa Alalamieh community workers based on Results obtained of Friedman test, has been obtained in Such a way; motivational Cultural Intelligence, meta-cognitive cultural intelligence, behavioral cultural intelligence, cognitive cultural intelligence.

Hadi zade and Tehrani, (2008) In a research found that among the styles of Rational and intuitive of Decision-making, Negative significance relationship, Between rational and avoidance decision making and between intuitive and instantaneous decision making, There is a significant positive relationship and also between style of avoidant decision making and each style of instantaneous and dependence decision making, negative Significant relationship was obtained in this study, In this study, a significant relationship was not found between any of the decision making styles and demographic characteristics Work experience and education managers.

### 3.2 Research conducted outside of Iran

Parker et al. (2007) in a research paid to measure cultural intelligence and its impact on compatibility, decision-making, cultural adaptation and performance of duty. Results of this study showed that aspects of cultural intelligence have relationship with each of these variables and in fact cultural intelligence has been introduced as predictor of these variables.

Parker et al. (2007)In examining five target decision making styles in between the two groups of 20 Students in Commercial in one of the universities in the UK, In the first group between rational style and any decision-making styles of intuitive, instantaneous and avoidant ,negative significance relationship, between Intuitive and instantaneous decision making styles and significant positive relationship was achieved between dependent and avoidant decision making style, In second group the relationship was obtained like the first group between Styles of decision making. In addition in the second group, existence of significant positive relationship was confirmed between avoidant and instantaneous style.

Wein Dainne, (2005) in a research among the 338 business student examined the relationship between personality and the four factors of cultural intelligence and came to the conclusion that conscientiousness has significant relationship with dimension of metacognitive cultural intelligence. Happiness and emotional stability is associated with behavioral aspect of cultural intelligence, extroversion has significant relationship with dimension of knowledge, motivation and behavior.

Sanlehem (2004) in his research in the field of decision making styles. 206 army officers Sweden based on general style of decision-making between rational decision making style and each style of intuitive, avoidant and instantaneous decision making of Subjects, reverse significant relationship and a significant positive relationship was achieved between dependent and avoidant decision making style.

### 3.3 Research Hypotheses

#### 3.3.1 The main hypothesis

Cultural Intelligence of managers in selection of their decision making styles among managers of water and sewage organization in Mashhad is effective.

#### 3.3.2 Secondary Hypotheses

Cultural Intelligence in selection of Rational decision-making style of managers is effective.  
Cultural Intelligence in selection of Intuitive decision-making style of managers is effective.  
Cultural Intelligence in selection of Dependent decision-making style of managers is effective.  
Cultural Intelligence in selection of Momentary decision-making style of managers is effective.  
Cultural Intelligence in selection of Avoidant decision-making style of managers is effective.



### 3.4. The research model

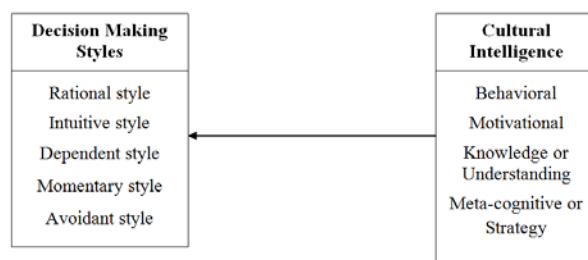


Fig1: Conceptual model

## 4 Research Methodology

According to the research hypothesis, the study is applied research with experimental design. In this study, the library method is used to collect information. Then descriptive method was used for data analysis and to prove the authenticity of water and sewage organization in Mashhad, field research in selected municipalities Mashhad Will be executed and also the used questionnaire of cultural intelligence and questionnaire of decision-making style was studied by some experts water and sewage organization in Mashhad and its validity was confirmed. Since Cronbach alpha is usually quite good indicator to assess the reliability of internal consistency between the instrument and its elements, this coefficient was used to determine the reliability. Cronbach's alpha coefficient for the questionnaire of cultural intelligence was .881 and for the questionnaire of the decision-making style was .804 and respectively in the questionnaire was .865. With regard to the suitability of alpha coefficients, the internal reliability is confirmed. The population of this research is all managers and assistants of water and sewage organization in Mashhad that the number of this is 53 due to the limited size of the study population was small and placed all of the population under study. To analyze the data in this study, both descriptive and inferential statistics is used using SPSS software. In the descriptive part, the frequency distribution and central indices (mean) and dispersion (standard deviation) is calculated. The relevant charts are drawn. The inferential statistics the correlation coefficient and regression was used to evaluate hypotheses and to examine the hypotheses.

## 5 Research findings

### 5.1 Analysis of descriptive statistics

The results on gender respondents indicated that of the 53 respondents, 74% male (most respondents) and 26 percent were female.

The results showed that of the 53 respondents in the age distribution of respondent's age of 66% between 44 and 49 years (the maximum number is included) and 34 % between 50 and 55 years.

The results of the study respondents indicated that 17% of the respondents' level of education below the bachelor, 58% of the license (the highest number) and 25 percent of graduate and above.

The results showed that the record of work in the history of 57% between 15 and 20 years and 43% between 21 and 26 years.

The results showed that the record of work in the history in area of 62% between 12 and 16 years and 38% between 17 and 21 years.

### 5.2 Analysis of statistics

To verify the hypotheses and determine the significance, the Pearson correlation coefficient was used to continue to analyze and interpret beyond.

### 5.3 The main hypothesis

Cultural Intelligence of managers in selection of their decision making styles among managers of water and sewage organization in Mashhad is effective.

Table 1: The correlation coefficient of Pearson between Cultural Intelligence and decision making style

Variables	The correlation coefficient of Pearson	Sig
Cultural Intelligence and decision making style	.681	Less than .0001

H<sub>0</sub>: There is no significant relationship between Cultural Intelligence and decision making style.

H<sub>1</sub>: There is significant relationship between Cultural Intelligence and decision making style.

According to the results in Table 1 can be seen that, Amount of significance level in this test is less than .001 and Pearson correlation coefficient is .681. So null hypothesis is false and one hypothesis is confirmed.

#### 5.3.1 First Secondary Hypotheses

Cultural Intelligence in selection of Rational decision-making style of managers is effective.

Table 2: The correlation coefficient of Pearson between Cultural Intelligence and Rational decision-making style

Variables	The correlation coefficient of Pearson	Sig
Cultural Intelligence and Rational decision-making style	.509	Less than .0001

H<sub>0</sub>: There is no significant relationship between Cultural Intelligence and Rational decision-making style.

H<sub>1</sub>: There is significant relationship between Cultural Intelligence and Rational decision-making style.

According to the results in Table 2 can be seen that, Amount of significance level in this test is less than .001 and Pearson correlation coefficient is .509. So null hypothesis is false and one hypothesis is confirmed.

### 5.3.2 Second Secondary Hypotheses

Cultural Intelligence in selection of Intuitive decision-making style of managers is effective.

Table 3: The correlation coefficient of Pearson between Cultural Intelligence and Intuitive decision-making style

Variables	The correlation coefficient of Pearson	Sig
Cultural Intelligence and Intuitive decision-making style	.545	Less than .0001

H<sub>0</sub>: There is no significant relationship between Cultural Intelligence and Intuitive decision-making style.

H<sub>1</sub>: There is significant relationship between Cultural Intelligence and Intuitive decision-making style.

correlation coefficient is .545. So null hypothesis is false and one hypothesis is confirmed.

### 5.3.3 Third Secondary Hypotheses

According to the results in Table 3 can be seen that, Amount of significance level in this test is less than .001 and Pearson

Cultural Intelligence in selection of Dependent decision-making style of managers is effective.

Table 4: The correlation coefficient of Pearson between Cultural Intelligence and Dependent decision-making style

Variables	The correlation coefficient of Pearson	Sig
Cultural Intelligence and Dependent decision-making style	.550	Less than .0001

H<sub>0</sub>: There is no significant relationship between Cultural Intelligence and Dependent decision-making style.

H<sub>1</sub>: There is significant relationship between Cultural Intelligence and Dependent decision-making style.

According to the results in Table 4 can be seen that, Amount of significance level in this test is less than .001 and Pearson correlation coefficient is .550. So null hypothesis is false and one hypothesis is confirmed.

### 5.3.4 4<sup>th</sup> Secondary Hypotheses

Cultural Intelligence in selection of Momentary decision-making style of managers is effective.

Table 5: The correlation coefficient of Pearson between Cultural Intelligence and Momentary decision-making style

Variables	The correlation coefficient of Pearson	Sig
Cultural Intelligence and Momentary decision-making style	.297	.031

H<sub>0</sub>: There is no significant relationship between Cultural Intelligence and Momentary decision-making style.

H<sub>1</sub>: There is significant relationship between Cultural Intelligence and Momentary decision-making style.

According to the results in Table 5 can be seen that, Amount of significance level in this test is .031 and Pearson correlation coefficient is .297. So null hypothesis is false and one hypothesis is confirmed.

### 5.3.5 5<sup>th</sup> Secondary Hypotheses

Cultural Intelligence in selection of Avoidant decision-making style of managers is effective.

Table 6: The correlation coefficient of Pearson between Cultural Intelligence and Avoidant decision-making style

Variables	The correlation coefficient of Pearson	Sig
Cultural Intelligence and Avoidant decision-making style	.365	.007

$H_0$ : There is no significant relationship between Cultural Intelligence and Avoidant decision-making style.

$H_1$ : There is significant relationship between Cultural Intelligence and Avoidant decision-making style.

According to the results in Table 6 can be seen that, Amount of significance level in this test is .007 and Pearson correlation coefficient is .365. So null hypothesis is false and one hypothesis is confirmed.

## 6 Conclusion and Recommendations

Statistical analysis obtained the following results:

### 6.1. The main hypothesis

Because of the significant level in Pearson correlation coefficient is less than .0001, Null hypothesis of no relationship is rejected, so there is a significant relationship and relatively strong with intensity .681 Between cultural intelligence and decision-making style. The direction of relationship is positive. Namely by increasing cultural intelligence, style of decision-making increases and vice versa.

### 6.2 First Secondary Hypotheses

Because of the significant level in Pearson correlation coefficient is less than .0001; Null hypothesis of no relationship is rejected, so there is a significant relationship and relatively average with intensity .509 between cultural intelligence and Rational decision-making style. The direction of relationship is positive. Namely by increasing cultural intelligence, style of Rational decision-making increases and vice versa.

### 6.3 Second Secondary Hypotheses

Because of the significant level in Pearson correlation coefficient is less than .0001; Null hypothesis of no relationship is rejected, so there is a significant relationship and relatively average with intensity .545 between cultural intelligence and Intuitive decision-making style. The direction of relationship is positive. Namely by increasing cultural intelligence, style of Intuitive decision-making increases and vice versa.

### 6.4 Third Secondary Hypotheses

Because of the significant level in Pearson correlation coefficient is less than .0001; Null hypothesis of no relationship is rejected, so there is a significant relationship and relatively average with intensity .550 between cultural intelligence and Dependent decision-making style. The direction of relationship is positive. Namely by increasing cultural intelligence, style of Dependent decision-making increases and vice versa.

### 6.5 4<sup>th</sup> Secondary Hypotheses

Because of the significant level in Pearson correlation coefficient is .031 and this is less than .05, Null hypothesis of no relationship is rejected, so there is a significant relationship and relatively weak with intensity .297 Between cultural intelligence and Momentary decision-making style. The direction of relationship is positive. Namely by increasing cultural intelligence, style of Momentary decision-making increases and vice versa.

## 6.6 5<sup>th</sup> Secondary Hypotheses

Because of the significant level in Pearson correlation coefficient is .007 and this is less than .05, Null hypothesis of no relationship is rejected, so there is a significant relationship and relatively average with intensity .365 between cultural intelligence and Avoidant decision-making style. The direction of relationship is positive. Namely by increasing cultural intelligence, style of Avoidant decision-making increases and vice versa.

## 7 Research proposal

### 7.1 The main hypothesis

According to the results obtained from testing the main hypothesis that, Indicates a high correlation between the components of cultural intelligence and decision-making style, Shows the high validity of the relationship between cultural intelligence and decision-making style so people use of knowledge and control of individual thought processes related to culture and will gain infrastructure for receive and decode their behavior and others and become aware and relative to their cultural similarities and differences and others and when communicating with others In different cultural-position use suitable decision making styles. Attention of managers to use any of these styles makes them able to act effectively in different cultural situations.

### 7.2 First Secondary Hypotheses

Due to Results obtained of the first sub-hypothesis test that showed high correlation coefficient, between cultural intelligence and components of rational decision-making style and Its intensity is moderate, In order to increase the strength of this relationship is suggested to managers that identify all possible solutions during deciding by rational method pay to evaluate the results of each strategy from all different aspects and finally select an optimal and favorable solution when faced with a deciding conditions.

### 7.3 Second Secondary Hypotheses

Due to Results obtained of the Second sub-hypothesis test that showed high correlation coefficient, between cultural intelligence and components of Intuitive decision-making style and its intensity is moderate. It can be suggested that In cases where managers have less tendency to follow the principles of completely rational and logical approach of purely rational decision-making style, pay more to follow feelings, insights and internal experiences and Instead of operate all the effort and time in order to identify all possible solutions, and decisions by relying on Insight into and past experiences of its decision.

### 7.4 Third Secondary Hypotheses

Due to Results obtained of the Third sub-hypothesis test that showed high correlation coefficient, between cultural intelligence and components of GroupDependencydecision-making style and its intensity is moderate. This suggests that manager somewhat acts independent in its decisions. In this context, it is recommended to use as far as possible, from views of others in his or her decision and take advantage from its suggestions and comments in final decision.

### 7.5 4<sup>th</sup> Secondary Hypotheses

Due to Results obtained of the Fourth sub-hypothesis test that showed high correlation coefficient, between cultural intelligence and components of instantaneous decision-making

style and its intensity is weak. In this case, it is felt that managers do not use of this style in the face of problems in different cultures. Decision-making skills in crisis situations are one of the needed skills by managers. As a result, it is suggested to managers that pay attention to the position in such circumstances. And by appropriate analysis conditions and impulse control use of their managerial capabilities.

### 7.6 5<sup>th</sup> Secondary Hypotheses

Due to Results obtained of the Sixth sub-hypothesis test that showed high correlation coefficient, between cultural intelligence and components of avoidant decision-making style and its intensity is moderate, is emphasis on early doing decisions. In this field it is suggested to managers that control their emotions and feelings in Communicating with others. And avoid from situations that cause increased stress and thus escape the status decision and delays in decision. As a result, if raise their self-esteem, better will be able react without escape from decision-making positions against opportunities and threats of the organization.

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**Primary Paper Section: A**

**Secondary Paper Section: AE**

## REPORTING ON SELECTED ASPECTS OF THE CORPORATE SOCIAL RESPONSIBILITY IN THE CZECH REPUBLIC

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**Abstract:** This paper examines the extent to which the largest companies domiciled in the Czech Republic disclose selected CSR related non-financial data. The analysis covers 100 companies with the largest turnover in 2014 and considers some specific characteristics of the reporting entities, including the industry in which they operate and a geographical location of its ultimate owners.

The main objective of the research is to identify which companies if any disclose the non-financial data, using a pre-defined scoring system. The results show that the most common are data on environmental and labour aspects. The number of such disclosures correlates with the industry sector in which the company operates as well as with the country of its ultimate owner.

**Keywords:** Corporate Social Responsibility, CSR, Sustainable Business, Disclosure Quality.

### 1 Introduction

External financial reporting is primarily a product of an information-asymmetric relationship between the owners (principals) and managers (agents) of companies. This relationship stems from the fact that the owners, who bear the major risks associated with the existence of a company often have only limited access to information about the current position and performance of the net assets owned by them. The variety of entities involved in the performance of companies and their interaction with its (not only business) environment, however, is much broader and includes current, former or prospective employees, customers, debtors, government or the local communities. We can say that the standard set of financial statements required by law reflects the information needs of these stakeholders only partially, since it is focused mainly on its primary function to provide financial data required by its current or prospective owners and neglects the needs of other stakeholders.

Reports that a priori focus on the other than financial indicators may have various forms. These include so-called integrated reports, corporate social responsibility (CSR) reports, or sustainability reports. Though they differ in part in their focus, their common goal is to enrich the basic set of financial statements so that companies can provide sufficient non-financial information to all relevant material stakeholders to help them to better meet their information needs.

While in many countries especially in developed countries of Western Europe and North America such reports are quite common, there is a belief that companies in the Eastern European countries including the Czech Republic (CR) often choose the option to publish only the minimum data and information required by the law. Unwillingness to disclose any extra information is thought to be present mostly among small and medium-sized companies, however the research that includes up-to-date empirical data on this topic is still rather limited. Current practices specifically in the area of reporting on socially responsible behaviour in the CR is therefore clearly a very current and appealing topic for further analysis.

### 2 Literature review

There are several research papers and articles covering the topics related to CSR reporting practices as well as dedicated reporting on environmental, social and other non-financial aspects. These identify several factors that affect the frequency and quality of CSR reports. The results of research carried out on samples of major European companies generally confirm that the CSR reporting is commonly a domain of large companies only (Drag - Tiron-Tudor, 2012). The emphasis is often placed on corporate

governance, but much less on social and environmental issues (Bonson - Bednárová, 2015). However, there also are some proposals for specific methodology on evaluating CSR reporting of small and medium-sized enterprises (Szczenowicz - Saniuk, 2016). Differences in quantity, quality and focus of such reports are yet evident across industries and sectors in which the reporting company primarily operates (Lock - Seele, 2015). This is caused by a different environmental impacts of such companies across various industries.

Among other factors very important are specific aspects of the country in which the company operates (Fortanier - Kolk - Pinks, 2011). The quantity and quality of CSR reporting is obviously influenced by both the tradition of disclosing such information by companies in the country as well as institutional factors and a degree of regulation (Jindrichovska - Purcare, 2011).

Some research also confirms that many CSR reports do not provide a comprehensive and relevant information particularly in high-risk or adversely developing areas (Michelon - Pilonato - Ricceri, 2015; Ditlev-Simonsen, 2014). This is partly caused by the fact that only a small number of such reports is in any way verified by an independent third party (Srivastava - Rao - Mock, 2013). The quality of these voluntary non-financial information often positively correlates with the quality of financial reporting of the company (Martinez-Ferrero - Garcia-Sanchez - Cuadrado-Ballesteros, 2015). However, if present, the external verification is sometimes of a dubious quality and often does not fulfil its desired purpose (Zori - García-Bena - Sierra, 2013).

Current research also points out that there is a different view on CSR reporting among experts on this issue and academics on the one hand and among executive management on the other. While management considers it rather to be an instrument for improving the company's image, experts accent mainly the aspect of increasing the transparency and a positive attitude towards the social environment of a company (Habek - Wolniak, 2015). The CSR and other non-financial reporting is, however, an area of increasing popularity and importance across countries (Lament, 2015), although the number of companies reporting on CSR-related aspects still cannot be considered to be significant or sufficient (Tschopp - HUEFNER, 2015).

Several studies specifically cover the reporting practices in the CR. Dana Dvořáková (Dvořáková, 2009), for example conducted a research on a sample of nineteen companies publicly traded on the Prague Stock Exchange in 2008. This revealed that even these companies, which supposed to have a very high level of financial reporting, often do not publish environmental and social information or they do so only in an inadequate form. The research also notes that if present the social and environmental information is almost never linked to the financial part and often contains only positive and favourable data. That raises reasonable doubts on whether the information is honest and complete or it serves only as a self-presentation of companies and their achievements in a given year. Other authors have focused on the medium, small and micro companies in the CR, where for the years 2013 and 2014 they examined the relationship between company size (measured by number of employees) and awareness of CSR issues respectively, based on a survey (Skýpalová - Kučerová - Dvořáková, 2016). The authors observed a significant positive correlation with the size of the company which confirms that in the CR size is an important factor in relation to the company's involvement in CSR. A similar research performed by Kunz is using a pre-defined questionnaire on a sample of about 250 Czech companies (Kunz, 2012). The research revealed a relatively high degree of awareness and commitment in the field of social responsibility of large companies, while their share decreased significantly with the shrinking size of the inquired company. While the most of these companies emphasized their dedication to an ethical behaviour and care for employees as main reasons

behind disclosing voluntary non-financial data the main motive behind such conduct identified by the management of these companies was the effort to improve the company's image and an internal integrity of the management, rather than e.g. the desire to satisfy the information needs of various stakeholders.

Conceptual content analysis of annual reports for 2006 done by Kašparová (Kašparová, 2011) on a sample of 104 companies points out the fact that companies in the CR mostly report on the internal processes and future plans of the company but the depth of the disclosed CSR related information is not very extensive. The information once published is rather descriptive in nature and lacks hard quantitative data to support the statements in such reports. The limitation of this particular research, however, is a fact that it focused only on the information disclosed in annual reports and not in any dedicated CSR reports.

A similar analysis of annual reports of 52 Czech and 30 Slovak companies was done by Kašparová and Škapa (Kašparová - Škapa, 2007) on information published in 2006. The research has revealed several differences in reporting practices between these two countries. The most frequently disclosed data in the annual reports of the Czech companies were those on environmental protection and waste management. This research is limited again by using annual reports as the only medium being analysed, and by the fact that information on environmental protection are, among other, a mandatory disclosure under applicable legislation in the CR. The results of the research also confirm the findings of other studies that large companies in the CR report about the CSR topics more frequently than small and medium-sized companies.

### 3 Research objective

A review of the literature and research papers that focus on the non-financial reporting practices specifically in the CR shows that at the moment not much empirical data is available and there is a considerable opportunity for further work that analyses the latest data. The objective of this paper therefore is to identify, analyse and critically evaluate the extent to which major companies in the CR disclose non-financial information that are not explicitly required by the applicable law (quantitative factor) and what is their content and form (qualitative factor). Given that this objective is rather general, it is useful to break it further to individual research questions. This paper specifically aims to answer the following questions:

- Among the largest companies, what is the percentage of those which voluntarily reported the non-financial information?
- Which companies the most commonly reported this information?
- About what CSR areas do companies report?
- How companies ensured the quality of this information, especially its accuracy and completeness?

Answering all these questions on a sample of the largest companies in the CR will then result in achieving the stated objective of this research.

### 4 Research method

To be able to answer each research question we will analyse external reports on a sample of 100 leading companies in the CR. The significance was assessed according to the level of revenues achieved by a company in the last financial year. Data was obtained from publicly available list compiled annually by the Czech Top 100 association that each year publishes an updated list of 100 companies located in the CR according to their per-year revenues. The information about CSR-related topics were gathered from two main sources; either from annual reports or from separate reports focusing on information about aspects of socially responsible behaviour. In all cases we considered statements for the year ended in 2014, since in the time the research was being conducted it was reasonable to assume that all companies considering reporting CSR-related

data for 2014 have already done so. The reports were obtained from two basic sources - from the electronic commercial register available on the Internet at [www.justice.cz](http://www.justice.cz) as well as from the official websites of analysed companies.

Further it is also necessary to define which data and quantitative as well as qualitative characteristics will be examined. These were selected so that all research questions could be reasonably answered using the collected data. We therefore chose the following characteristics, broken down according to the research questions:

#### ▪ What is the proportion of companies that voluntarily report the non-financial information?

This question will be answered in dichotomy by concluding that the company either does or does not report the non-financial information. Only if it does it will be assessed further for details of this reporting. Therefore, the following two characteristics were defined:

- The company does report on non-financial information
- The company does not report on non-financial information

#### ▪ Which companies report on non-financial information?

To answer this question, it is necessary to assess multiple variables as several factors may affect the nature of the non-financial disclosures. Examined variables will include the industry in which the company operates and the ultimate ownership of the company. The ultimate ownership will be assessed specifically to determine, whether the company is owned locally or by a foreign owner and if so, from which region. The analysed characteristics were chosen as follows:

- Industry in which the company operates
- Geographical location of the ultimate owner

#### ▪ What CSR areas the companies cover in their reports?

In the area of non-financial reporting companies need to take into account the specific needs of users of such reports and essentially report on three key areas as defined below. These three areas are also applicable for this research. These are the following:

- Labour and employment
- Social aspects
- Environmental aspects

This categorization is inspired by the standards that have been created by the Global Reporting Initiative (GRI) non-profit organization. We use their CSR guidelines as the reporting good practice as in many studies GRI is identified as the most influential and widely acceptable standard of the CSR reporting in the world (Lim - Kiyoteru, 2012; Ronen, 2011; Lament, 2015; Tschoop - Huefner, 2015; Vukic, 2015). GRI similarly identifies three main areas of CSR, namely economic, environmental and social (GRI 2015, p. 23). In this paper, however, we focus only on non-financial aspects of reporting, thus we ignore the economic aspects recognized by GRI and many other CSR reporting guidelines. The reason is that the reporting on economic aspects has a long tradition in the CR and is to a considerable extent required by applicable law. This could lead to many companies identified as partially reporting on some CSR aspects only because they properly disclose their financial performance in line with legal requirements, thus potentially distorting the findings of this research. Separation of the labour and employment area from the social aspects of CSR in this paper is again motivated by a hypothesis that companies will report more often than not on aspects required by Czech legislation (companies are currently required to disclose information about their environmental activities as well as labour practices - without any further guidance - within their annual reports) and will more frequently omit the remaining social aspects. After separating the labour aspects from the social area this includes such aspects as the company's impacts on local communities, anti-corruption initiatives, safety of the company's products and others.



Since for the purpose of this study we categorize the companies as those who either do report or do not report on some specific areas at this point we still need to determine the circumstances under which the individual company will be identified as the one reporting on the aspect properly. It often happens that companies that formally comply with its legal obligations to disclose information about the impact on either the environmental or labour aspects, often cover these areas only briefly, in a form of vague statements. Since it is not desirable to identify these companies as the ones that do report on the examined area, we will for the sake of consistency stick with the criteria proposed by GRI. We will answer the question whether the company does report on the area (i.e. employment & labour, social, or environmental) positively, if the report contains information on at least one of the indicators set by GRI methodology. The methodology set out in this paper is therefore significantly more benevolent than the applicable internationally accepted standards of the CSR reporting. For the purposes of this paper, however, we will not apply all of the criteria under GRI literally, since some of them can be considered as rather irrelevant for companies settled in the CR (typically e.g. criteria concerning child labour, or the rights of indigenous peoples) or too strict and we have intentionally selected the criteria that we believe are potentially applicable for the most companies from the analysed sample, adjusted where deemed necessary.

▪ **How the companies ensure the quality of the non-financial data disclosed, especially with regards to their accuracy and completeness?**

Without access to inside information of companies one cannot objectively assess whether these accurately and completely present the data within selected CSR topics. Therefore, there are many different methods that allow users to be able to conclude on the reliability of the reported information. One possibility is that the company may adhere to some international CSR reporting standard (to enhance the users' confidence over completeness of such information). Another important tool to enhance the credibility of these information is to have them verified by an independent third party (to enhance the users' confidence over its accuracy). The company can thus be using the following means of securing highest possible level of accuracy and completeness of the reported non-financial information:

The report is in prepared according to the following standard of non-financial reporting:

- GRI
- Other standard
- None

The non-financial data are verified by an independent third party:

- Statutory auditor
- Dedicated independent organization
- Independent individual
- Other verification
- No external verification

A content analysis was selected as a research method in this paper. Researched data were divided based on the dichotomy of either their presence or absence in the report examined. The assessment was carried out in all cases by the authors. The research results are shown in the following section. The summary of findings is then given in the concluding section of this paper.

## 5 Data and discussion

The following section presents the results of the analysis of annual and other reports of 100 companies in the CR with the largest turnover as described in the previous chapters. Results are presented per the research questions set for this paper in part 4 - Research Method.

Tab.1: No. of companies reporting non-financial information per CSR area:

Reported aspects	Occurrence (n)	Occurrence (%) from total
Social aspects	5	20 %
Labour and employment aspects	20	80 %
Environmental aspects	17	68 %
<b>Total (companies reporting on at least one non-financial aspect)</b>	<b>25</b>	<b>100 %</b>

Tab.2: Distribution of reporting companies per industry:

Industry	Occurrence (n)	Occurrence (%) from total
Automotive	3	12 %
Energetics	3	12 %
Chemical industry	4	16 %
Other industrial production	4	16 %
Services	1	4 %
Building and construction	2	8 %
Telecommunications	2	8 %
Mining	2	8 %
Other	4	16 %
<b>Total</b>	<b>25</b>	<b>100 %</b>

Tab.3: Distribution of reporting companies per geography of the ultimate owner:

Location	Occurrence (n)	Occurrence (%) from total
Czech Republic	8	32 %
Western European country	10	40 %
Other	3	12 %
Unknown	4	16 %
<b>Total</b>	<b>25</b>	<b>100 %</b>

Tab.4: Use of CSR or other relevant reporting standard:

Location	Occurrence (n)	Occurrence (%) from total
GRI	1	4 %
Other relevant reporting standard	0	0 %
No standard used	24	96 %
<b>Total</b>	<b>25</b>	<b>100 %</b>

Tab.5: Verification of the non-financial data by an independent third party:

Location	Occurrence (n)	Occurrence (%) from total
Statutory auditor	0	0 %
Specialized independent company	1	4 %
Dedicated individual	0	0 %
Dedicated non-profit organization	0	0 %
Other independent verification	0	0 %
No verification	24	96 %
<b>Total</b>	<b>25</b>	<b>100 %</b>

Based on the collected data we will now be able to answer the individual research questions as defined in the section 3 – Research objective.

- What is the proportion of companies that voluntarily report non-financial information?
- What CSR areas companies cover in their reports?

We can observe, that although the research sample included only the largest companies in terms of turnover, i.e. companies with the largest stakeholder pressure on providing a relatively broad portfolio of non-financial information the results of the research are consistent with the older researches identified and briefly discussed within the section 2 – Literature Review. The total of

only 25% of companies disclosed non-financial information in the minimum quality and quantity in 2014 for at least one non-financial CSR aspect. Earlier we have assumed that the most common areas covered would be labour and environmental aspects as these are, however vaguely, already explicitly required by applicable law in the CR. This appears to be true as disclosures related to labour and environment occur circa twice as often as disclosures related to social aspects. The rest 75% companies though provided none or only unsatisfactory information about social, labour and environmental aspects of their business activities. This shows a low commitment to transparency and a failure of the largest companies to sufficiently meet information needs of its stakeholders. It appears that companies in the CR only slowly catch up with the current trend of an increased stakeholder engagement and clear and timely disclosure on other than finance related information that can be seen in economically highly developed countries.

- Which companies report on non-financial information?

Among the 25 companies that disclosed information from at least one relevant area most of them come from industries where higher social or environmental impacts are expected. The largest portion of the identified companies work in chemical or petrochemical industry, in diversified industrial production, automotive sector or energetics. However still many other companies from these sectors provided no relevant non-financial data at all. The percentage of companies from the total of analysed companies in that particular sector were 40%, 20%, 25% and 38% respectively. Companies in chemical and energy industries therefore disclose the information the most commonly among all analysed industries, which is linked with their obvious severe impact mainly in environmental as well as occupational health and safety areas.

In line with our expectations we can further conclude that the country of the ultimate owner is also an important factor influencing whether a company will or will not disclose sufficient non-financial information. Contradictory to what was expected, not many of such companies have the ultimate owner from western Europe. These make only 19% of all in the analysed sample of companies. Slightly higher is the share of local companies that reported sufficient non-financial data – 8 out of 30, i.e. 27%. This may be caused by a fact, that despite the companies with foreign owners are large (thus significant) in terms of local market, they are a rather marginal part of larger international groups, who prefer to publish their group reports instead of individual reports for the entities operating in the CR only. Concerning the very soft criteria used in this research these numbers are rather unsatisfactory.

- How the companies ensure the quality of the non-financial data disclosed, especially with regards to their accuracy and completeness?

The results for the last question are very unsatisfactory. Although we have concluded earlier, that there is ca 25% proportion of companies in the CR among the largest ones that report on at least one non-financial CSR area, only one of these complies with GRI or any other CSR reporting standard and again only one company had their non-financial data checked (audited) by an independent third party. That poses significant doubt on whether the data disclosed by such companies for 2014 are really complete and accurate and therefore can be used as a reliable source of information for its prospective users.

## 6 Conclusion

The analysis on the sample of 100 Czech companies shows that for 2014 only 25% of them disclosed at least very minimum information about either environmental, labour or social aspects of their activities as defined in this paper. The most common are data covering environmental and labour aspects, as these were also explicitly required by the legislation applicable for 2014. The willingness to report such data correlates with the industry sector in which the company operates as well as with the country of its ultimate owner. Companies disclosing non-financial

information mostly conduct the business in petrochemical industry, energetics, automotive sectors as well as in diversified industrial production. Most of them have Czech ultimate owner; companies with ultimate owners in other geographical areas or with untraceable owners that disclose such information are less common.

As a subject for further analysis in this area we would propose extending the sample of companies as well as the number of periods analysed. This would allow to conclude on development of the non-financial reporting in the CR over a certain time period. If the data set is large enough statistical methods could be used as means of evaluating the results allowing to find some patterns and correlations among observed variables.

The analysis can as well be performed by a wider panel of researchers. This will allow to determine, whether and to what extent can the results vary based on different judgement and perception of individual evaluators to objectivise the results.

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**Primary Paper Section: A**

**Secondary Paper Section: AE**

## MORAL LUCK – ETHICAL ROLE OF LUCK IN THE WORK OF THOMAS NAGEL

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**Abstract:** In the late 1970s, the problem of moral luck had come to the fore of philosophical attention. The issue was published by the leading figures in contemporary moral philosophy – Bernard Williams and Thomas Nagel, through its own works published under the same title *Moral Luck*. They sought to deny the alleged immunity of morality to luck. They themselves were based on the assumption that luck threatens morality no less than it threatens the other dimensions of human life. In the present study we analyse the Nagel's concept of moral luck that arose in response to Williams's essay *Moral Luck*.

**Keywords:** moral luck, moral responsibility, moral assessment, contemporary ethics

### 1 Introduction

The practice confirms that luck – in terms of the uncontrollable facts by will – carries a great significance for the human life. The social basis of health, capabilities we have, or situations we are facing it is all influenced by luck. Nonetheless, there is at least one sort of value which appears to be immune to the impact of this phenomenon – moral value.

The idea that the moral status of a human being is subject to luck seems to be for most of us incomprehensible. In this respect, our intellectual culture is strongly influenced by Kantian ethics. Immanuel Kant formulated the thesis that morality is the only worth area that is totally immune from luck (Nussbaum, 2003, p. 63). He considered that the moral worth of an action does not lie in the result, nor in actions, but lies in the will itself. In this context, he further claimed that the fundamental assumption of moral action is good will whose „...*supreme formal determination*...“ (Kant, 1990, p. 53) is moral law acting in the form of unconditional for all and, applicable under all circumstances requirement prescribing a way to determine the will with the purpose of moral action. According to Kant, the moral quality of acts therefore consists of „...*the principle of the will*...“ (Kant, 2004, p. 24) that „...*moral law determines the will immediately*...“ (Kant, 1990, p. 92) and thus independently of the empirical motives, individual interests and the natural inclination of the person.

The above passages are demonstrated by the introductory paragraphs of the *Foundations of the Metaphysics of Morals*: „*Nothing can possibly be conceived in the world, or even out of it, which can be called good without qualification, except a good will. Intelligence, wit, judgement, and the other talents of the mind, however they may be named, or courage, resolution, perseverance, as qualities of temperament, are undoubtedly good and desirable in many respects; but these gifts of nature may also become extremely bad and mischievous if the will which is to make use of them, and which, therefore, constitutes what is called character, is not good... A good will is good not because of what it performs or effects, not by its aptness for the attainment of some proposed end, but simply by virtue of the volition; that is, it is good in itself*...“ (Kant, 2004, pp. 16-17).

Kant's doctrine of the inviolability of morality has affected other ethical theories insofar as it began to be regarded by many as a characteristic of the true moral thinking (Nussbaum, 2003, p. 619). Kantian tradition of moral philosophy has been questioned in the late 1970s by the foremost representatives of the contemporary moral philosophy – Bernard Williams and Thomas Nagel. They accomplished this through the concept of *moral luck* thereby regain the claim that moral worth is subject to luck its original legitimacy.

### 2 The problem of luck in Nagel's work

The term *moral luck* has first been coined by an English moral philosopher Bernard Williams in his paper *Moral Luck* in 1976, while reflecting a series of cases in which the moral status of a person is partly determined by factors beyond its control.

One of Williams's main objectives of his – over twenty years – effort was to clarify deficiencies of the Kantian view of morality. English author was of the opinion that Kant, who held to the view of extreme rationalism, proclaimed that morality is immune from the randomness of the outside world that is in fact not available. He thus regards the modern approach to morality as limited and distorted. Taking into account the above, he demanded a return to the ancient ethical traditions.

Despite the fact that Williams strongly rejected the idea of independence of morality from the randomness of the outside world, he himself undertook to examine its intuitive appeal. He concluded that the above concept offers solace to a sense of the world's unfairness, presented in two aspects:

1. If morality is immune to luck, then opportunity to be moral it is equally available to all.
2. If morality is immune to luck, so people would not be morally assessed for what is due to factors beyond their control.

In the further considerations, the author pays attention to the luck effect on the reflective assessment from the position of the subject of acting (Statman, 1993, p. 5). In addition, he emphasises an individual's ability to rationally justify its own decision. In this context he wants to show that rational justification of his own action or preceding decision is a matter of luck to some extent. He presents his claim based on the story of Gauguin. Paul Gauguin was young creative painter who had decided to leave his family. He did so in an attempt to live life, which would allow him to increase his chances of becoming a great painter. He went to live in Tahiti, believing that by averting from the obligations towards his family or requirements that had been imposed at that time of life he can carry out his project. However, at the time of the decision he could not know whether it will be successful. The only thing that will justify his choice will be success itself (Williams, 1976, p. 23). In fact, Gauguin does not have control over success. The will, no matter what is strong, is not sufficient to carry out his desire. In order to allow Gauguin to become a great painter, there should be much more: talent, motivation and many other factors beyond his control. In this context, the justification for his decision is affected by factors which are resulted from a luck.

American psychologist and philosopher Thomas Nagel in his paper *Moral Luck*, which was created in response to Williams's conception of luck pointed out that the issue of moral luck arises from the contradiction between the moral intuition and practices of moral assessment. In other words, people intuitively accept the principle according to which they cannot be morally responsible and, consequently assessed for facts arising as a result of interaction of factors which are beyond their control. Under this approach, the difference in the acting of two people given by factors beyond their control cannot be the object of the moral assessment. However, a regular practice of the moral assessment clearly shows that factors beyond the control of the acting subject cause differences in assessing the morality of one and the same action. This includes, in particular, the cases of the values of action based on the results or the consequences resulting therefrom. In addition, the consistent application of the intuitive principle leads to the exclusion of the possibility of moral responsibility because „...*a person does not have absolute control over all the factors affecting the nature of his deeds*“ (Nagel, 1979, p. 26).

We analyse the case of two equally irresponsible drivers who decided to drive drunk in order to return home. While the first of the pair (driver A) arrived home without any harm caused yourself or other road users, the driver B accidentally killed a child happened to be on the driver's route home. We have a question to consider: What is the difference between the above cases? These are two equally dangerous drives of two equally irresponsible drivers who decided to drive their vehicles drunk with the intent to return home. The present difference is not driving, intention nor incapacity of the driver. In both cases, this involves the action dependent on the will, the behaviour determined by the decision the drivers made.

The difference lies in outcomes due to factors beyond the driver's control. It is subject of luck whether a child cross the carriageway at a moment when driver B passes incriminated stretch of road. Despite the fact that the only significant difference between the two cases based on results conditioned by the presence or absence of the child on the route, i.e. facts beyond the driver's control, the action of driver B is - in comparison with actions of driver A - subject to much more negative assessment, both legally and morally. Since that the consequences are much more tragic for the driver B, the assessment of the decision of the driver B do drive drunk is stricter. It is this phenomenon of luck that changed our view of his action. Such conception of the moral justification is opposed to Kantian conception of morality.

In this context, it should be added that the American thinker does not dispute the rightness of the intuition, however, he agrees with the view that the luck affects the moral status of the individual. Taking into account this fact, he formulates his own concept of four kinds of moral luck (Craig, 1998, p. 520).

Firstly, it is a *constitutive luck* in terms of positive or negative factors which are beyond human being's control, however, they strongly influence personality type. These are specifically the genetic predisposition, education, environment, culture, living conditions and many other factors partially determining the character dispositions, individual abilities or character involved in the process of creating personality. In this sense, our personality is in part conditioned by factors beyond our control (Dingwall – Hillier, 2015, p. 74). The person cannot transform his own nature by simple decision. Likewise, he cannot substitute its own character dispositions. In this context, the author refers to the problem of lack of control over his own character. He also thinks about the rightness of consideration of morality or immorality of the person based on its character dispositions. In his view, the fundamental problem of such judgments arises from the fact that the moral disposition, and emotions are not in the absolute power of the individual. They are influenced by factors which are beyond man's dominion (Hsieh, 2013, p. 47). Taking into account this fact, it who we are is, to some extent, matter of *constitutive luck*.

Secondly, there is a chance in relation to the circumstances affecting the possibilities of the human action (*circumstantial luck*). According to Nagel, a specific act is determined by a free will of the acting person and accidental circumstances as a result of which the acting person is subjected to the moral test which might not succeed (Nagel, 1979, p. 34). We encounter a similar set of claims in Aristotle who, in his *Nicomachean Ethics* permits that in some cases, a good man under the pressure of circumstances might act shamefully and do things that – not to be conflict situation – would never done (Nussbaum, 2003, p. 628). Based on the results of cognitive and science investigations, it is clear that a person does not have absolute control over all the factors affecting the nature of his deeds. There are often situations in which we have limited opportunities and choices with which we are faced and are available at that particular point in time. In this context, Nagel correctly points out that in the practice of moral assessment „...we judge people for what they actually do or fail to do, not just for what they would have done if circumstances had been different“ (Nagel, 1979, p. 34). In this sense, the moral status of a human being is

varied and depending on the situations to which it is exposed. His statements it is illustrated with an example of a German officer in a concentration camp, who might have led a quiet and morally harmless life if the Nazis had never come to power in Germany. Likewise, he reflects the life of German businessman living on the territory of Argentina, who left Germany for business reasons in 1930, and thus escaped from the war crimes (Nagel, 1979, p. 26). In this regard, we mention that the citizens of Nazi Germany were due to war events subjected to the moral test. But it is a test to which the citizens of other countries were not subjected. The most of them failed a test and subsequently collaborated on the appalling crimes. Let us add that the author via this kind of the moral luck reflects the problem of assessing the morality of persons based on their nationality. Nagel illustrates the nature of the problem on the example of American civilians who during the Vietnam War had opposed their country's actions. There was nothing they could do to stop what happening. Although the feeling of responsibility for the actions of their own country in this context may seem unintelligible, we still encounter cases considering the morality on grounds of the country: namely, the issue of collective guilt. The problem is expressed by Nagel's words: „*Citizenship is a surprisingly strong bond, even for those of us whose patriotic feelings are weak* ...“ (Nagel, 1979, p. xiii).

The third type of moral luck notices about the consequences of the human acts partly, determined by factors which are beyond acting subject's control (*resultant luck*). For this reason, it is a luck in terms of the consequences of the human action. In this respect, the author has established the three categories of cases in which the assessment of the morality of action varies depending on the consequences affected by the above factors. In this context, the object of the Nagel's investigation is following: the attempt to commit a crime, acts of recklessness and decisions for which the subject who makes decision is aware of the consequences of the event would be.

The author points out the difference in the assessment irregularities and attempt to do so. He stresses the fact that accomplishment of the crime or inchoate crime is in many cases a matter of chance. In the case of the murder, a degree of culpability of an offender can depend, it would seem on „...whether the victim happened to be wearing a bullet-proof vest...“ (Nagel, 1979, p. 29).

In the case of offenses committed negligently, the object of the Nagel's examination is the intentional aspect of human behavior. As one of the examples he mentions the case about the possible consequences of irresponsible driving of the drunk driver. While in the first case, the drunk driver cannot handle the management and his car swerves on to the sidewalk, on which at that time were no pedestrians in its path, in the second case, the group of pedestrians was passing through the incriminated road section and no one survived the car crash. The behaviour contained in the latter case is subject to much stricter assessment, even though the only significant difference between the two cases based on consequences whether the pedestrians happened to be on the sidewalk or not and thus the fact that drivers cannot affect (Nagel, 1979, p. 29).

The third category of cases reflects decisions that lead us to doubts about consequences which are results of them, since they fail to predict at the time of decision. In such cases, people tend to act on the assumption, or rather in the hope that their actions will lead to the desired results. In such cases, people tend to act based on the assumption, or rather in the hope that their actions will lead to the desired results. Therefore they take a moral risk and „... only time will show whether it was justified“ (Statman, 1993, p. 14). He again illustrates his claim by the example from history: „If the Decembrists had succeeded in overthrowing Nicholas I in 1825 and establishing a constitutional regime, they would be heroes... they fail and pay for it, but they bore some responsibility for the terrible punishments meted out to the troops who had been persuaded to follow them“ (Nagel, 1979, p. 30).

The American thinker shifts in their thinking one step further taking into account previous analyses. He claims that: „...if one cannot be responsible for consequences of one's acts due to factors beyond one's control, or for antecedents of one's acts that are properties of temperament not subject to one's will, or for the circumstances that pose one's moral choices, then how can one be responsible even for the stripped-down acts of the will itself, if they are the product of antecedent circumstances outside of the will's control?“ (Nagel, 1979, p. 35). In this context, he represents the last kind of the moral luck (*causal luck*). The decision of the previous specific act as an object of moral assessment is not within the Nagel's thinking. It is only a matter of good will and does depend on the circumstances of the will, as suggested Immanuel Kant. Reflecting this fact, the acts of the person's aid depends on the fact whether the individuals who need help are at that specific time near to the actors, or whether they possess the necessary skills or other means, with the help of which they carry out this worthy act. In this regard, he further notes that if the circumstances surrounding the implementation of some harsh acts have changed, they would have never happened. In the same way he treats the circumstances affecting the process of creating personality. In this context, he provides an example of a child who due to the parental disinterest, poor living conditions or brutal educational practices became murderer.

### 3 Conclusion

In the light of the above, it can be concluded that the luck – in terms of the uncontrollable facts by will – carries a great significance for the human life. It affects various dimensions of human existence. The luck from the perspective of human being is rather demoralising factor taking into account the aspect of the influence of the human life nature. It creates a sense of the loss of control over their own lives, does not provide a sense of security and stability, raises uncertainty about the achieving the life goals. In this respect, the desire of a human being to be freed from the randomness of the outside world is more than obvious. Another no less obvious fact is, however, the reason for its refusal. In order to avoid influence of luck also means to eliminate the parts of life subjected to luck. However, many of them are very desirable for individual's life. In addition, they enrich individual's life by its diversity and thus make his life unusual and distinctive. In the words of M. C. Nussbaum: „Contingency, an object of terror and loathing, may turn out to be at the same time wonderful, constitutive of what makes a human life beautiful or thrilling“ (Nussbaum, 2003, p. 147).

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### Primary Paper Section: A

### Secondary Paper Section: AA



# REENGINEERING OF REVERSE LOGISTICS IN CONTEXT OF SUSTAINABLE DEVELOPMENT IN PRODUCTION BUSINESSES IN SLOVAKIA

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The article is prepared as one of the outcomes of a research project VEGA no. 1/0305/15 "Impact of environmental tools on the growth of competitiveness and sustainability of businesses" conducted by Department of Production Management and Logistics of University of Economics in Bratislava, Slovak Republic.

**Abstract:** Fast development of technologies does only bring positives, but also negative aspects influencing man and his behaviour towards environment. In companies, there has been a growing interest for company process reengineering in order to assure achieving company objectives. One of these processes is also reverse logistics aiming not only to secure financial prosperity of a company, but also diffusion of business interests with interests of customers and state. Aim of this article is to create ideological model of reverse logistics, based on questionnaire survey performed on a sample of selected businesses of production character in Slovakia, on grounds of suggested solutions and arrangements aimed at optimisation of reverse logistics conditions in context of sustainable development in production businesses in Slovakia. Results of the survey and established recommendations regarding reverse logistics reengineering pointed out an importance of the issue and necessity to deal with this issue in every production business in Slovakia.

**Keywords:** reverse logistics, sustainable development, environment

## 1 Introduction

Currently, in times of products of science-technological revolution, every day there are millions of new products produced. Hence, managers in every company are interested in those areas allowing reengineering of company processes and assurance of achieving company objectives. One of these processes is reverse logistics. For the first time, its management appeared in 70 years of 20<sup>th</sup> century, but this topic did not get sufficient attention. It could be pictured as reverse flow of product or its packaging from consumer back to supplier or producer. This process is carried out especially due to clearance and waste materials and packaging. Task of reverse logistics is not only to secure financial prosperity of business, but also diffusion of business interests with interests of customers and state. State interests might be fulfilled with help of reverse logistics from point of positive environmental impact, which is achieved in process of reverse flow.

Nowadays, there is a high consumption of energy, materials, product in the world and hence, there is a lot of waste created. It is very important to find and apply solutions to this problem. One of keys to this solution is reverse logistics in context of sustainable development. Reverse logistics allows us to process and collect used or disputed goods, components, products, packaging, excessive supplies and use or valorise them in a certain way with regards of environment and health of public. Management of reverse flows is significant and key from point of profits, image as well as protection of environment.

## 2 Literature review

Company has started to realise negative implications on environment and has started to form environmental politics dedicated to improvement of quality of environment, health and living conditions of public. This politics are amended by legal norms. A great emphasis is placed on reverse logistics while its importance is still growing. There are also other terms connected with the term reverse logistics and those are reversible logistics, waste logistics, convertible logistics or recycling logistics. In the following part of this article, we will look closer on attitudes and opinions of authors on reverse logistics and sustainable development.

One of first authors considering reverse logistics is considered to be P. Murphy. In his thoughts and ideas he used the term reversible distribution which matches the current name - reverse logistics. Reversible distribution was defined as movement of goods from customer to producer via all distribution channels.<sup>1</sup>

Importance of reverse logistics was pointed out by authors A. Dianne Mollenkopf and David J. Closs, who stressed that in time the importance of reverse logistics grows and companies start will start to realise potential hidden in reverse flows. For a long time reverse flows were understood as undesirable side products of logistics chains and companies concentrated on decreased charges for this business area, instead of trying to differentiate themselves and hence gain competitive advantage.<sup>2</sup>

M. Thierry, M. Salomon, J. Van Nunen and L. Van Wassenhove created the term „Product Recovery Management“. This term involves management of all used or eliminated products, components and materials, company is responsible for. Authors categorise possibilities regarding handling of reverse flows and those are: direct use, reparation, renovation, reformation, cannibalisation and recycling. This structure is pictured in more details in table 1.<sup>3</sup>

Table 1: Structure - reparation, renovation, reformation, cannibalisation and recycling

	Degree of disassembling	Quality requirements	Final product
<b>Reparation</b>	To degree of product	Put product into functional state	Some parts are fixed or substituted by other ones
<b>Renovation</b>	To degree of module	Check all modules and upgrade to specified degree	Some modules are fixed or substituted (by the same or improved)
<b>Reformation</b>	To degree of parts	Check all modules and parts and upgrade product to state "as new"	Used and new modules/parts are combined into new, potentially improved product
<b>Cannibalisation</b>	On selected parts	Depends on the process in which are parts further used	Part of components is used again, others are recycled or disposed
<b>Recycling</b>	To degree of material	High quality, when material is used for new components	Material are used again for production of new parts

Dale S. Rogers and Ronald S. Tibben-Lembke defined reverse logistics with emphasis on objectives and logistics processes as process of planning, implementation and control of originality, financially favourable flow of raw materials, materials, worked materials, final products and related information from their consumption to their origin aimed to create value, or other disposal.<sup>4</sup>

Craig R. Carter and Lisa M. Ellram characterise reverse logistics as a process applied by companies to reengineer environmental behaviour with use of recycling, reduction of the amount of used materials and repeated use.<sup>5</sup>

According to A. Dupal' and Z. Marečková reverse logistics can be understood as a process of planning, implementation and control of reverse flows of materials, intermediate products,

<sup>1</sup> Murphy, P.: A preliminary study of transportation and warehousing aspects of reverse distribution. In Transportation Journal. ISSN 0041-1612, 1986, vol. 25, no. 4, pp. 12-21.

<sup>2</sup> Mollenkopf, Dianne A., Closs, David J.: The Hidden Value in Reverse Logistic. In Supply Chain Management Review. ISSN 1521-9747, 2005, vol. 9, no. 5, pp. 34-43.

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<sup>4</sup> Rogers, D. S., Tibben-Lembke, R. S.: Going Backwards: Reverse Logistics Trends and Practices. Pittsburgh: Reverse Logistics Executive Council, 1999. pp. 2-20. ISBN 978-0967461908.

<sup>5</sup> Carter, Craig R., Ellram, Lisa M.: Reverse logistics: a review of the literature and framework for future investigation. In Journal of Business Logistics. ISSN 0197-6729, 1998, vol. 19, no. 1, pp. 85-102.

packaging and final products, from production, distribution or point of consumption to point of recovery or appropriate ridding of.<sup>6</sup>

Authors H. R. Lourenço and J. P. Soto characterised basic elements of reverse logistics in form of transparent following table 2.<sup>7</sup>

Table 2: Basic elements of reverse logistics

What is?	Input	Activity	Outcomes	From	To
Process	Eliminated products	Planning	Repeatedly used products	Point of collection	Producers
Task	Used products	Implementation	Recycling		Central collection point
Abilities	Products or parts distributed in preference	Control	Reformation		Point of creation
Activity	Packages or products with dangerous characteristics	Collection	Disposal		
	Information	Transport	Reduction		
	Ingredients	Storage	Management		
	Worked supplies	Acceptation	Again achieved products		
	Final products	Packaging			
	Related information	Transportation			
		Reduction			
		Management			
		Disposition			

V. Jayaraman, L. Yadong and E. M. Findlay in reverse flows state tangible and intangible competitive advantages. Tangible competitive advantages include: recuperation of value from used products; offer of green products, returned goods offer information regarding sale effectivity; prolonged period and option to choose place to return goods increases growth of online and offline purchases. Intangible competitive advantages involve: improved company image; possibility for small businesses and suppliers to gain information from returned product; opportunity to estimate customer reactions, opinions and satisfaction of physical parameters of returned products.<sup>8</sup>

In accordance with M. Džubáková there is given norm ISO 14001: 2015, for increased company performance in relation with environment for organisations feeling responsible for environment and trying to systematically manage their own processes and products with an objective to protect environment and sustainable development.<sup>9</sup>

In recent years, according to Wenjuan Wang many industries have realized that reverse logistics is a necessity for sustainable competitiveness. Reverse logistics has become a key competence in modern supply chains. And it has been a field of importance for organizations due to growing environmental concerns, legislation, corporate social responsibility and sustainable competitiveness.<sup>10</sup>

### 3 Methodology and data

Aim of this article is to create ideological model of reverse logistics, based on questionnaire survey performed on a sample of selected businesses of production character in Slovakia, on grounds of suggested solutions and arrangements aimed at optimisation of reverse logistics conditions in context of sustainable development in production businesses in Slovakia.

Critical area:  $\chi^2_p > \chi^2_{1-\alpha} [(r-1).(s-1)]$  when  $\alpha$  is level of importance, or  $(1-\alpha)$  is credibility.  $\chi^2_{1-\alpha} [(r-1).(s-1)]$

At level of importance 0,05:

$$\chi^2_{1-\alpha} [(r-1).(s-1)] = \chi^2_{0,95} [(5-1).(5-1)] = 16$$

With credibility 0,95 or at the level of importance 0,05 we accept the hypothesis that there is statistically important dependency between coefficients.

Calculation for chi-quadrat:

$$\chi^2 = \sum \frac{(O - E)^2}{E}$$

Chi -quadrat = 19,971

Calculation for degree of freedom  $df=(s-1)*(r-1)$

$$Df=(3-1)*(3-1)$$

$$Df= 4$$

$$p= 0.00284073$$

Hypothesis was not confirmed as the value of  $p < 0,05$

If we discovered, there is an association between statistical elements we can precede to the next analysis which is characterization of intensity of association based on relation.

$$Q = \frac{(ab).(\alpha\beta) - (a\beta).(ab)}{(ab).(\alpha\beta) + (a\beta).(ab)} \cdot 11$$

where,  $a$  = statistical variation and  $b$  = statistical variation;

$$Q = 0,8668$$

### 4 Data analysis

Selected production businesses in Slovakia participating on survey are fully declaring their responsibility to protect environment. They also commit to follow legislation requirements and focus their primary activities in correspondence with principles of permanently sustainable development and criteria of environmental system of management. Implications of production processes on environment are therefore considered always ahead. In times of realisation itself companies must follow principles of management of environmental protection and waste management, saving energy, water and application of the best affordable technologies.

To achieve these objectives to respect reverse logistics, prevention of waste creation, limitation of its amount and decrease of dangerous characteristics of waste is necessary to consider general principles of environmental protection, such as principle of cautiousness and principle of permanent sustainability. Also it is vital to consider technical feasibility and economic viability, source protection, environmental protection and protection of human health.

It is a social responsibility of every company to improve security and ecologic safety of products throughout their entire durability, to save sources and minimise impact on environment. Every company, in times of its existence, is monitored by

<sup>6</sup> Dupaľ, A., Marečková, Z.: *Vplyv zelenej a reverznej logistiky na tvorbu a ochranu životného prostredia*. 1. vyd. Bratislava : Vydavateľstvo EKONÓM, 2011. 32 p. ISBN 978-80-225-3193-1.

<sup>7</sup> Lourenço, H. R., Soto, J. P.: *Reverse Logistics Models and Applications: A Recoverable Production Planning Model*. Barcelona: Department of Economics and Management, Universitat Pompeu Fabra, 2002. 4 p. Available at: <https://repositori.upf.edu/bitstream/handle/10230/1164/636.pdf?sequence=1>.

<sup>8</sup> Jayaraman, V., Yadong L., Findlay, E. M.: *Creating Competitive Advantages Through New Value Creation: A Reverse Logistics Perspective*. In Academy of Management Perspectives. ISSN 1558-9080, 2007, vol. 21, no. 2, pp. 56-73.

<sup>9</sup> Džubáková, M.: *Revízia normy ISO 14001 a vplyv na environmentálny manažérsky systém*. In Vplyv environmentálnych nástrojov na zvyšovanie konkurencieschopnosti a udržateľnosti podnikov - I. : zborník príspevkov z vedeckého seminára Katedry manažmentu výroby a logistiky pri príležitosti týždňa vedy a techniky 2015, Bratislava: Katedra manažmentu výroby a logistiky FPM EU, 2015. ISBN 978-80-225-4193-0, pp. 1-2.

<sup>10</sup> Wang, W.: *A Decision Method for Returns Logistics Based on the Customer's Behaviour in E-commerce*. In Procedia Computer Science. ISSN 1877-0509, 2015, vol. 60, no. 1, pp. 1506-1515.

<sup>11</sup> Pacáková, V. et al.: *Štatistická indukcia pre ekonómov a manažérov*. 1. vyd. Bratislava: Wolters Kluwer, 2015. pp. 67-90. ISBN 978-80-8168-081-6.

executive administration whether there could be found any violations or non-fulfilment of environmental legislation in times of its activity.

Within environmental management there is one of production businesses in survey that implements basic principles to achieve permanently sustainable development. These principles are as follows: environmental education – where company increases awareness of its employees via courses and presentations; management of chemical substances – where company attempts to substitute solvents on base of siccative organic substances used in soldering, degreasing and cleaning processes by solvents on base of water; slowdown global warming – there is focus on decreased amount of greenhouse gases released into atmosphere and at the same time it is focused on acquisition of 100 % of electric energy produced from renewable resources, like water, solar, wind, geothermal energy and energy of biomass; guarantee of environmental products – its aim is to reduce amount of harmful substances and apply program Green Partner, which includes list of forbidden, limited and controlled substances; apply principle 3R – Reduce, Reuse, Recycle when handling waste.

In survey we found out that one of production businesses is attempting optimisation of natural gas consumption for heating its facilities by 5 %, decrease of electric energy consumption to light production halls by 10 %, installation of economy lighting in production halls; implementation of economy measures to save drinking water; reduce noise level in production halls by 5 %.

## 5 Results and discussion

Based on survey performed on a sample of selected companies located in Slovakia we came to following statements. We investigated that in production businesses there are tons of waste produced annually, that include for example cardboard, polystyrene and foils. Companies try to recycle these wastes in a most appropriate manner, and hence decrease charges to dispose the waste. In one of the production businesses there was produced waste in volume of 10 480 020 kg in a previous year. Its growth has increased in given company gradually and it is related to expansion of production and increased amount of produced goods. In another production business they managed to decrease volume of waste by 9 780 kg in years 2014 and 2015. This company states the reason to be application of program “Returned packages”. The principle of this program is that it is based on 3R in sphere of rational use of resources and subsequent waste production. Some of important factors determining whether to apply program “Returned Packages” are distance of supplier, size of component and its quality. In an undisclosed company there are two types of waste handling: depreciation and disposal. Depreciation is use of physical, chemical and biological characteristics of waste. Disposal is handling waste that do not harm environment.

In survey we investigated that the greatest volume of waste is represented by waste resulting from production process. Some other waste materials are for example plastics and paper, which is related to cardboard, in which there are packed individual components necessary for production process. There are other wastes in companies such as oils, dangerous waste and communal waste. In production process there exist certain percentage of spoilt goods; company tries to identify them immediately throughout regular control operations to depreciate them or process them further. This is secured by processes of reverse logistics. This reverse process might be applied to precede preventable creation of undesired waste, especially in early processes of production where product have not passed irreversible process and it is still possible to fix it or process for different use.

In one of production businesses plastic waste represented 30 % of waste for year 2015. Company reasons this claiming that plastic is not part of their products, but they referred to plastic pallets to plastics waste in 2015, while in previous years company used europallets. There could be also included plastic

containers used to store components necessary for productions, pet bottles, polystyrene, plastic rolls, pet foils and plastic covers. Production waste represents 33 % of entire waste of company with the equal percentage share 33 % of paper waste, where there belong cardboards used for lorry lining which protects goods from physical damage during transportation and to store smaller kinds of products. There was lower percentage of dangerous waste with 2 % and oils with 3 %. Communal waste represented 1 % of waste in 2015.

In 2015, in one production business the greatest volume of waste was represented by metal waste that is not returned back to production process. Farther, there is communal was that constitutes 18 % and is plumbless and ever-present part of waste management of given company, stainless waste 5 %, dangerous waste 2 %. The lowest representation is by aluminium waste 1 %, paper and cardboard 1 % and plastics 1 % which does not represent considerable percentage of waste management out of entire volume of waste.

In another production company, there is applied colour concept of waste classification. Yellow waste bins are dedicated for plastic waste such as pet bottles, waste plastics, and plastic foils which represents 44 % of entire waste. Blue bins are designed for cardboard and boxboard which is 9 % of company's waste. Glass belongs to green bins and represents only 1 % of the waste. Remains of paint, waste thinners, lead batteries, oils, organic solvents, waste oil all represent 3 % of waste and this type of waste bellows to red bins. In brown bins there is placed household waste which presents 3 % of waste. These waste bins are made of plastic and therefore they are assigned for collection of separated non-flammable waste. For collection of flammable and dangerous waste there are metal bins, this type of waste presents also 3 % of waste. In the company there is also waste formed of scrap iron and it represents 13 % and parts of other non-specified blending wastes with 24 %.

Based on survey performed on a sample of production businesses located in Slovakia we investigated how businesses perceive environmental politics of a business, sustainable development, reverse logistics and processes related to minimisation of negative impacts of business activities on environment.

Based on results of a survey it can be established that every production business applies environmental politics of a business and their employees are aware of it. This possibility was marked by 69,63 % of respondents, 15,8 % of companies stated they are not aware and only 10,87 % of companies cannot answer this question. Employees of a company are made aware of this environmental politics at the time of starting in the company, as every newly accepted employee must pass compulsory training, which is renewed for employees annually, every two years depending on the production business. In case employees work with dangerous waste, they have specialised training with regards on treating of dangerous waste, while this training is repeated every year. Environmental politics in companies is available for all employees in specifications, manifestations and intranet of every company.

What are environmental objectives of a company for the upcoming year? 95 % of companies are familiar with these objectives as it is essential part of the company influencing other activities of a business. 3 % of respondents do not know what environmental objectives of their company are and 2 % of respondents cannot answer this question. Many of production businesses are planning to continue in their current environmental plans and for example one chosen production business would like to reduce CO<sub>2</sub> emission production from their consumption of electric and thermal energy by 10 363 t of CO<sub>2</sub>; decrease water consumption by 2710 m<sup>3</sup>; depreciate waste by more than 98 %; assure there is no accident with effect on environment; secure there are no forbidden substances in final products; improve environmental and energetic awareness of employees. How is company planning to handle waste in upcoming years? 82 % of employees participating on questionnaire survey knows,

how company plans to handle the waste, only 5 % of respondents do not know how company plans to handle the waste issue and only 13 % cannot answer the question. Many businesses have their own projects arranged for upcoming years, while every year they plan further improvements. With assistance of these projects they save material and economic sources as well as environment. One of production businesses sees large potential in returnable packages, where the biggest contribution is in plastic containers, because their positives are perceived but not only ecologists but also by economy. In this group, manager can see improvement for environment in company in form of designed dimensions and types of packages based on requirements or experience in manipulation with components. Significant advantage of these designs is immediate change according to requirements of suppliers what would not be possible with foreign suppliers.

Another production business has started to apply project "Green factory". Fundamental of this project is rational utilisation of energies with aim to decrease consumption of electric energy by 200 000 kWh in comparison with previous year. The most energy 45 % out of all energy is consumed by air conditioning and compressors. The second is lighting with 34 %. The least of electric energy is spent in gatehouse and kitchen which represents only 2 %. Company stated that this year they introduced changes in form of replacement of equipment in server room, where there was not only achieved lowered energy consumption but also savings on cooling of the whole server system. Another activity was optimisation of camera system in the company, where formal televisions were replaced by new ones, more ecological models. There were also installed heat insulating foils in administration spaces, which creates further savings on cooling and heating.

## 6 Conclusions

Correct functioning of successful production business in current dynamic business environment requires appropriate management and coordination of all in-house and out-houses processes. Unification of all managerial tasks leads to gradual fulfilment of company objectives. Continually increasing competitiveness caused that progress in all managerial areas is focused on acquiring and attracting customers among all competing business. Due to this trend of rivalry it is important for companies to focus on wider scale of activities and seek areas where they could improve the current state. In past, reverse logistics was forgettable factor in creating company strategy, but nowadays there is more emphasis put on this factor. Are of reverse logistics could be perceived as subgroup of logistics as whole, it even has wider field of access and its activities enter into many company factors. Task of reverse logistics is to again use returned goods, materials, it enters areas of disputes and it also deals with recycling processes. These individual functional activities have impact on company finances in decrease of expenses throughout reversible use of materials, another factor is customers perceiving ecological activities of a business emerging from recycling processes. Sustainable, socially responsible business is in interest of company and helps to fulfil relation towards legislation requirements, most often regarding area of environment.

Our recommendation in sphere of reverse logistics in context of sustainable development in companies is to create logistic entity itself in every production business. This sphere requires initial expenses in company to equip administrative spaces, means, or expenses necessary for new job positions, but as a result in long term it means step forward and benefit in context of sustainable development in sphere of reverse logistics. Some advantages of creation of individual logistic entity and its separation from classic logistics can be witnessed in improved coordination of activities in area of logistics, in better organisational division and solutions in area of reverse logistics, improved public opinion, option of better direction and control of expenses and better allocation of responsibilities and powers in area of sustainable development.

Further we would like to point out to sustainable development in every production business that belongs to pillars. There are three

pillars and those are economic, social and environmental. Every production business directed towards sustainability must consider these pillars. Economic pillar includes employees, because they create expenses in form of wages. Expenses will appear, as we recommend change of wage structure of employees in production businesses which brings lowered expenses for waste separation. Employees would be motivated to keep correct work habits and to come with suggestions of improvement to their supervisors.

Social pillar involves employee training which increases knowledge of environmental area. The aim of the training is for every employee to think of what could be done to support production business in fulfilment of environmental objectives of a company. Environmental pillar could involve setting objectives to decrease burdening of environment. Results of questionnaire survey and our recommendation within reengineering of reverse logistics processes in context of sustainable development showed the importance of this issue and necessity to deal with this issue in every production business in Slovakia.

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**Primary Paper Section: A**

**Secondary Paper Section: E, H**

## THE EFFECT OF PERSONALITY CHARACTERISTICS ON THE SALES PERFORMANCE OF IRAN INSURANCE SALES REPRESENTATIVES

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**Abstract:** The study population is active representatives selling Iran insurance under the Azadi branches, that number was 349. The navigation of a standardized questionnaire assessing five personality traits McCrae and Costa to measure personality and a questionnaire was used to measure sales performance. To analyze the data, descriptive and inferential statistics were used. Inferential statistics to test hypotheses of correlation and regression tests were used. LISREL and SPSS software was used for statistical analysis. Data analysis showed that neuroticism does not affect the performance of sales representatives selling insurance. But the extroversion, conscientiousness features, compliance features and characteristics of openness to accepting Iran's experiences affect the performance of sales representatives selling insurance.

**Keywords:** personality features, functionality, performance, sales, insurance

### 1 Introduction

The importance of personality has been nowadays acknowledged as one of the predictors of job performance. It is also obvious that an individual's personality plays an important role in their job performance since it determines motivation and attitudes of a person towards a job and the manner they deal with job requirements. According to Witt, personality can be utilized for the prediction of work-related behaviors and performance.

Accordingly, personality can have an impact on the process interpreting the organizational environment for employees and shape behaviors highlighted by such an environment. In fact, personality is taken into account as one of the factors determining the types of perception associated with environment and reactions towards it. Personality is similarly one of the significant factors affecting compatibility of an individual with a job because each personality trait has conditions specified for a job. In this respect, understanding the relationship between a personality trait and a job can assist organizations to augment their productivity, increase job satisfaction among their employees, prevent losses due to probably inappropriate selections, and save huge economic costs imposed by improper selections through right selection of their workforce.

One of the most important goals of for-profit organizations is to have earnings through selling products and providing services in market which are mostly conducted by sales personnel in a company; therefore, they play an unquestionable role in this respect. Given the importance of this issue over the past century, numerous research studies have been focused on the factors determining the performance of sales personnel (Armstrong, 2005).

It seems that special attention to personality traits of sales and marketing personnel and their impacts on sales performance in this industry would be a good solution to deal with this issue. The present study was to investigate the effect of personality traits on sales performance of Iran Insurance Company (Co.) agencies in the city of Tehran based on the theory of five broad personality traits. The main research question addressed whether personality traits of Iran Insurance Co. agents had an effect on sales performance of Iran Insurance Co. agencies or not?

### 2 Theoretical Foundations

Today, the importance of personality has been accepted as one of the factors predicting job performance. Besides, it is obvious that an individual's personality in this respect has a significant effect in their job performance as it establishes motivation and attitudes of a person to a job and the manner they cope with job requirements. According to Witt, personality can be employed for the forecast of work-related behaviors and performance. As a matter of fact, personality is taken into account as one of the factors determining the types of perception of environment and reactions to it. Personality is likewise one of the decisive factors affecting the compatibility of an individual with a job because personality trait has conditions specified for a job. In this regard, considering the relationship between a personality trait and a job can help organizations to increase their productivity, augment job satisfaction among their personnel, avoid losses due to probably improper selections, and prevent huge economic costs incurred by inappropriate selections through right selection of their employees.

In this line; Guthrie (2008), examined the relationship between personality and career success in order to predict individuals' performance in managerial positions through obtaining information about their personality traits. They developed a personality model of a successful young manager using specific personality traits prioritized on the basis of their relative importance for managerial positions. Comparing the personality traits of students enrolled in the field of MBA, Guthrie (2008), successfully predicted career success in these students based on the given model. Five years following this preliminary study, it was concluded that graduates in the field of MBA whose personality traits were identical to the personality model of an ideal manager were more likely to work full-time and earn higher salaries. The results of the given study showed the need for further investigations into special fields such as the importance of personality traits in dealers.

Among professionals with high public relations, self-esteem is also another personality trait associated with personal success. Goldberg (1993), investigated the mutual impact of self-esteem on talent in terms of sales performance forecast. Hussey and Hussey and Duncombe (1999), put forward the theory that self-esteem is likely to have a reverse effect on the variables of environmental conditions in terms of job performance. It was argued that a good work environment was more likely to compensate for lower levels of self-esteem and high self-esteem could make amends for a negative work environment. Eventually, people with high self-esteem compared with those with lower levels of self-esteem at the same stressful work environment had greater tendency to perform more tasks.

Relationship between personality and performance has been a widely investigated issue in the field of industrial psychology over the past century (Epley and Waytz, 2007). Job performance is in this regard a multidimensional concept that shows how employees do their duties, what initiatives they consider, and what measures they take to resolve problems (Snell and Bohlander, 2007). Moreover, such a performance indicates the extent employees perform their tasks as well as the manner they make use of the resources available, as well as the time and energy spent for their activities (Fotros, 2010).

Karimi (2009) in a study entitled "Examining the relationship between personality traits and job performance in police forces" checked the correlation between several personality traits and job performance in a group of police forces. In the given study, the theory of major basic personality traits including extraversion, work conscientiousness, emotional stability, agreeableness, and compatibility were used. The findings revealed that work conscientiousness was highly correlated with job performance among the five factors considered although extroversion and

emotional stability led to a better job performance in police forces. However, various research studies found that the two factors of agreeableness and compatibility were not correlated with job performance in employees.

White, Kark examined the interactive relationship between personality traits, organizational policies, and underlying functions using a sample size of 540 employees in an organization. The data collection instrument was comprised of the Traits Personality Questionnaire (major five factors) and Underlying Function Data Questionnaire (job sacrifice and inter-personal relieving). The results of the given study demonstrated that conscientiousness was significantly correlated with job sacrifice and compatibility had a significant relationship with inter-personal relieving. Furthermore, extraversion was correlated with inter-personal relieving.

Barrick et al. (2009), recruiting three sample groups (1- the first group included 146 individuals from middle managers of the American army; 2- the second group involved 103 sales agents in an industrial organization; 3- the third group was comprised of 121 people from local press institution managers) showed a significant relationship between the personality trait of conscientiousness, cognitive ability, and job performance among all the study groups. The results also revealed that the values for the correlation and variance of performance and conscientiousness were higher than those of performance and cognitive ability. In other words, conscientiousness could explain more ratio of the variance of job performance compared to that of cognitive ability. Furthermore, increased variance when these two factors (cognitive ability and conscientiousness) interactively entered into the equation was not significant.

Furthermore; Barrick et al. (2009), conducted a meta-analysis in order to review the credibility of the dimensions of the major five factors of personality (extraversion, conscientiousness, emotional stability, agreeableness, openness to experience) for job performance forecast. The results of their meta-analysis demonstrated that conscientiousness was a credible predictor of performance among all job groups as well as all job components. The other personality factors had the required validity only in some jobs and some work-related criteria for performance forecast. Barrick et al. (2009), also found that extraversion was a valid predictor of job performance in managers and emotional stability was a trustworthy predictor of job performance in police forces. Agreeableness was also a valid predictor of job performance for both job groups; however, openness to experience showed no validity for the prediction of job performance in job groups. Extraversion was also a valid predictor of training efficiency and emotional stability, agreeableness, and openness to experience were reliable predictors of training efficiency.

Aaker, (2001) in a study entitled "Personality traits and performance: the intermediary role of compromise at call centers" supported a proposition in a Canadian call center for five personality factors. The results revealed that all the five personality traits had a positive effect on employee performance in terms of customer relationship. Moreover; conscientiousness, agreeableness, extraversion, emotional stability, and openness to experience were significantly correlated with performance in terms of customer relationship. Thus, the five major personality traits were predictors of employee performance in terms of customer relationship in call centers. Given the t-value, the findings of the study indicated that agreeableness was the most important predictor of employee performance considering customer relationship and openness to experience, agreeableness, emotional stability, and extraversion were the subsequent predictors in this respect.

Likewise; Mahraves (2013), conducted a study entitled "Academic performance forecast: relationship between five

major personality factors and academic performance" using a statistical sample of students in the faculty of Psychology and Educational Sciences (mostly enrolled in the field of Psychology) in the University of Bucharest in Romania. According to the results of the given study, only conscientiousness was significantly correlated with academic performance which could be generalized as a predictor out of the five major personality factors. The other factors had an approximately 2% correlation with academic performance.

Khanian (2011), investigated the effect of five major personality factors on sales personnel performance in terms of the moderating role of culture. It was noted that research on sales personnel performance was a continuous process which had drawn different stakeholders to obtain profits through a combination of factors for an effective sales personnel performance. The results of this study showed that no special collection of factors could lead to effective performance of sales personnel in all conditions because performance was considered as an output based on backgrounds, contents, and conditions. It was concluded that the five major personality factors could not effectively explain the performance of sales personnel. Customer-orientation by these individuals could also have a significantly intermediary role in predicting their performance within the framework of five major personality factors. As well, the moderating impact of culture in sales personnel was illustrated in the provided model to help in determining the likely unusual differences in their performance.

Parhizkari (2012), in a master's thesis entitled "Investigating the impact of personality traits in principals on their performance from the attitudes of schoolteachers in the city of Chalus" examined the impact of personality traits of principals through obtaining the attitudes of schoolteachers in the city of Chalus in the academic year 2012-2013. The findings of the study indicated a reverse relationship between introversion in principals and their performance based on the attitudes of teachers. There was no relationship between extraversion in principals and their performance. A reverse and negative correlation was also observed between neuroticism in principals and their performance. In terms of gender, no significant difference was found between the attitudes of male and female teachers towards principals' performance.

Khakpoor (2004), in a master's thesis entitled "Examining the relationship between personality traits and job performance (underlying/task-based) of principals in lower-secondary schools in the city of Hamedan in the academic year 2003-2004" checked the relationship between personality traits and job performance of the given principals. The results of the study showed a significant and positive relationship between the personality traits of principals and their levels of underlying as well as task-based performance.

### 3 Research Model

To measure the variable of personality in the present study, FFM: Five-Factor Model of Personality developed by Robert McCrae and Paul Costa in 1998 was used. This model has a comprehensive view towards human and it encompasses nearly all the personality traits known by the public as well as the scientific theories of personality.

To check the performance of an insurance company affiliated agencies, a researcher-designed questionnaire was used in this respect that was also a tool for the measurement of all the dimensions of sales performance.

Given the review of the related literature and the variables used to fulfill the objectives of the present study, the conceptual research model was illustrated as follows (figure.1):



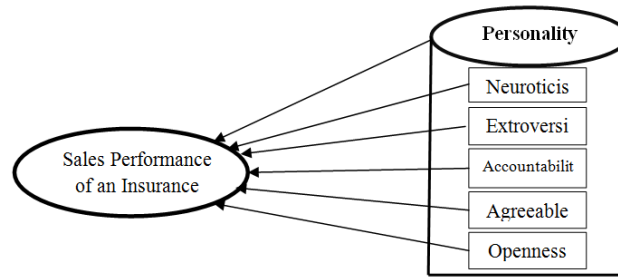


Figure1: Conceptual model of the study - Extracted from the models presented by Aaker (2001)

#### 4 Research Methodology

In terms of the research method, this study was survey-based and it was in the form of an applied research considering the research objectives. The statistical population of the present study included active agencies of Iran Insurance Co. affiliated with the Azadi branch. According to the data and statistics released by the Vice-Chancellor Office for Resources in Iran Insurance Co., the total numbers of active agencies of the given company affiliated with the Azadi branch were equal to 349. Due to the limited population size; following the determination of the sample size, the questionnaires were distributed randomly among active agencies of Iran Insurance Co.. Given the limited number of members of the population, Cochran's Formula was used in order to determine the sample size. Using the sample size (349 individuals) in Cochran's Formula, the sample size was determined as 183 individuals. Moreover, simple random sampling method was used in order to distribute the questionnaires.

$$n = \frac{\frac{(1.96)^2 (0.5)(0.5)}{0.05^2}}{1 + \frac{1}{349} \left( \frac{(1.96)^2 (0.5)(0.5)}{0.05^2} - 1 \right)} = 183 \quad (1)$$

Table 1: Results of the Kolmogorov-Smirnov test

Row	Research variables	Kolmogorov-Smirnov test	Level of accepted error
1	Neuroticism	0.677	0.748
2	Extroversion	1.102	0.177
3	Accountability (Conscientiousness)	0.820	0.512
4	Agreeableness	0.836	0.487
5	Openness to experience	0.682	0.742
6	Sales performance	0.753	0.624

Considering that the distribution of dependent variables in the present study was normal and met the conditions for linear regression in which dependent variables should be normal and given that the present study was to investigate the effectiveness of one independent variable on a dependent variable; the examination of the research hypotheses was conducted through linear regression analysis.

Table 2: Results of regression analysis for the model in the first hypothesis

Model	non-standardized coefficients		standardized coefficient	T	significance
	B	error criterion estimate	beta		
Constant value	3.202	0.321	-0.025	9.979	0.000
Neuroticism	-0.031	0.095		-0.324	0.747

It was found that the constant value was significant; however, the variable of neuroticism in the given model was not so. Thus, it was concluded that the variable of neuroticism had no significant effect on the performance of Iran Insurance Co. agencies.

**5.2 Sub-Hypothesis 2:** Extroversion had an impact on sales performance of Iran Insurance Co. agencies. The regression analysis test was also conducted for the second sub-hypothesis.

In terms of the library method, prominent resources and research papers published in professional journals as well as books and scientific and research-oriented publications and online resources were used.

Using Cronbach's alpha test in the SPSS software, the reliability of the standard Questionnaire of Five-Factor Personality Measurement by McCrae and Costa (1998), was obtained equal to 0.853. The reliability coefficient of the researcher-designed questionnaire for the measurement of sales performance with the initial distribution of 30 questionnaires was also 0.842.

#### 5 Data Analysis

In this section, the normality of data was obtained in order to conduct data analysis through parametric or non-parametric tests. The Kolmogorov-Smirnov test was similarly used to determine the normality of the research data. Considering the results of the given test through the calculations in the SPSS software summarized in Table 1, all the data associated with this study were normal.

**5.1 Hypothesis 1:** Neuroticism had an effect on sales performance of Iran Insurance Co. agencies. The regression analysis test was also conducted for the first hypothesis. (Table2)

The results for the correlation between the two variables of extroversion and sales performance were illustrated in Table 3.

Table 3: Results of regression analysis for the model in the second hypothesis

Model	non-standardized coefficients		standardized coefficient	T	significance
	B	error criterion estimate	beta		
Constant value	34.301	4.721	0.047	7.266	0.000
Extroversion	0.826	1.358		0.608	0.000

According to Table 3, the constant value and the variable of extroversion were significant in both models. Following the determination of the significance of the constant value and extroversion, the standardized coefficients represented a standardized regression coefficient or constant value. Standardized regression coefficient or beta in the second hypothesis was equal to 0.047 indicating the positive effect of the variable of extroversion on sales performance.

**5.3. Sub-Hypothesis 3:** Accountability (Conscientiousness) had an effect on sales performance of Iran Insurance Co. agencies. The regression analysis was also conducted for the third hypothesis.

Table 4: Results of regression analysis for the model in the third hypothesis

Model	non-standardized coefficients		standardized coefficient	T	significance
	B	error criterion estimate	beta		
Constant value	31.603	5.117	0.084	6.176	0.000
Accountability (Conscientiousness)	1.616	1.480		1.092	0.000

As illustrated in Table 4, the constant value and the variable of accountability (Conscientiousness) were significant in both models. Following the determination of the significance of the constant value and accountability (Conscientiousness), the standardized coefficients indicated a standardized regression coefficient or beta. The standardized regression coefficient or beta in the third hypothesis was also equal to 0.084 revealing the

positive impact of the variable of accountability (Conscientiousness) on sales performance.

**5.4 Sub-Hypothesis 4:** Agreeableness had an impact on sales performance of Iran Insurance Co. agencies. The regression analysis was also conducted for the fourth hypothesis.

Table 5: Results of regression analysis for the model in the fourth hypothesis

Model	non-standardized coefficients		standardized coefficient	T	significance
	B	error criterion estimate	beta		
Constant value	33.646	4.624	0.059	7.277	0.000
Agreeableness	1.208	1.345		0.754	0.000

According to Table 5, the constant value and the variable of agreeableness were significant in both models. Following the determination of the significance of the constant value and the variable of agreeableness, the standardized coefficients showed a standardized regression coefficient or beta. The standardized regression coefficient or beta in the fourth hypothesis was equal

to 0.059 representing the positive effect of the variable of agreeableness on sales performance.

**5.5 Sub-Hypothesis 5:** Openness to experience had an effect on sales performance of Iran Insurance Co. agencies. The regression analysis was also conducted for the fourth hypothesis.

Table 6: Results of regression analysis for the model in the fifth hypothesis

Model	non-standardized coefficients		standardized coefficient	T	significance
	B	error criterion estimate	beta		
Constant value	32.336	4.124	0.091	7.842	0.000
Openness to experience	1.419	1.201		1.182	0.000

As shown in Table 6, the constant value and the variable of openness to experience were significant in both models. Following the determination of the significance of the constant value and the variable of openness to experience, the standardized coefficients represented a standardized regression coefficient or Beta. The standardized regression coefficient or beta in the fifth hypothesis was equal to 0.091 indicating the positive effect of the variable of openness to experience on sales performance.

## 6 Discussion and Conclusion

Sales performance is taken into account as one of the main issues in marketing and management which is affected by various cultural, social, personal, and psychological factors. Understanding sales-related behavior and performance is not a simple task, however. In order to achieve success in this respect, marketers should go beyond different factors affecting sales performance and investigate the ones determining sales performance. Accordingly, there is no doubt that better recognition of the factors affecting sales performance and more likely the prediction of behavior and personality of sales personnel and eventually effectiveness on their performance requires the recognition of sales personnel personality traits that are considered as one of the most important and effective factors. The Trait and Factor Theory is also one of the most practical theories in recognizing personality traits in the field of marketing and NEO Personality Inventory is among the various tests used to check personality traits and frequently employed in various marketing research studies.

Given the results obtained, the following suggestions were put forward to managers and authorities of Iran Insurance Co. in order to promote sales.

Considering the results of the research hypotheses in terms of the positive effect of extraversion, openness to experience, accountability (Conscientiousness), and agreeableness on sales performance; it became obvious that sales performance was not affected by intellectual behavior and it was mainly on the basis of entertainment, emotions, and feelings in sales personnel. Most of the sales were accidental and instantaneous and the results actually indicated that more sociable, imaginative, cultured, curious, original, open-minded, intelligent, artistic, and sensitive sales personnel were more likely to have an effect on sales performance. Given the results obtained, the following practical suggestions were presented to managers and authorities of Iran Insurance Co.:

1. According to the results of the first hypothesis, managers of companies and service-oriented institutions particularly insurance companies ought to check personality traits in sales personnel precisely prior to their recruitment and prevent the employment of individuals with the given type of personality traits.

2. Considering the results of the second hypothesis, it was recommended to recruit extroverted individuals as sales personnel and move the introverted individuals towards extroversion through training. The training courses need to be held in different areas. In terms of problem-solving, such behaviors in individuals are required to be reinforced: inclination to speak loudly, use of the best solutions crossing mind during speaking, inattention to others' comments, and interest to participate in group discussions in order to solve the problems. Given the communications, it was suggested to enhance such behaviors in sales personnel: preference to have face-to-face relationships if possible, inclination to see non-verbal reactions and behaviors, need for instantaneous feedback, lack of interest to write daily memories, and search to find opportunities for conversations and social activities. Reinforcement of several other behaviors was also recommended in terms of decision-making: reception of information from others prior to decision-making and inclination to show quick reactions in critical conditions. In terms of inter-personal interactions, such behaviors were suggested to be promoted in sales personnel: use of the energy obtained from interactions with others, feeling of energy discharge due to long-time loneliness tolerance, and having numerous friends and acquaintances. Given the area of attention and concentration in individuals, such behaviors were recommended to be enhanced: much focus on surrounding people and items, inability to focus at the time of silence, exhaustion due to coercion to sit and long-term attention to one item or issue, and indifference to interfering factors. Considering natural strengths, such behaviors were suggested to be improved: giving energy to people and groups, ability to react quickly, feelings of passion and thrill, and making individuals get to know each other. In terms of natural weaknesses, it was recommended to enhance such behaviors in individuals: not giving space to others to speak, inattention to others' information, no writing about difficulties, and reactions before thought. In order to help people to move away from introversion and to recover extroversion among sales personnel, it was suggested to reinforce such behaviors mentioned in different areas.

3. Given the results of the third hypothesis, it was recommended to boost accountability (Conscientiousness) in sales personnel and recruit only responsible individuals. The structure of the company should be designed in such a way that only accountable employees are able to have access to high-ranking managerial positions. This is an obvious fact that managerial skills and knowledge can be acquired in the working process, but accountability as the most basic factor affecting work progress cannot be easily obtained. Although we can demand accountability in the personnel of an organization through an optimistic strategy to change oneself to a practical model for

other employees and expect them to follow us and acquire accountability, this fact should be considered that adopting this strategy can only make us hopeful that the spirit of accountability will emerge in the work environment. In this respect, some psychoanalysts believe that accountability is a personality trait which originates from a major decision in one stage of human life. In other words, humans become accountable due to the effect of various social and educational factors and maintain such a personality trait during their lifetime and also show it at their work environment. However, those who have not experienced this stage always evade such a responsibility. Therefore, the element of accountability should be taken into account as the most basic selection criterion at the time of assigning managers. On the other hand, control systems in an organization must form up in a way that the accountability of employees is inevitable. In other words, supervisory systems ought to be in a form that managers and the staff cannot ignore accountability. To achieve this objective, the first condition in order to have access to managerial positions should be accountability. Persuasion and control of employees and managers towards accountability have two valuable consequences in this respect: a. changes in the selection methods of managers; and b. transformations in supervisory institutions.

4. According to the results of the fourth hypothesis, it was suggested to reinforce sociability in sales personnel and recruit social individuals. In order to enhance social and cordial behavior in a salesperson, they should be suggested to have such behaviors: use of different facial and bodily gestures in order to show their interests in the issues and use of gentle handshakes. These behaviors would indicate confidence, warmth, openness, and honesty. They should also use body language (signs and gestures), strongly avoid smoking, never take off their jackets or loosen their ties if they have worn one for being formal provided that the host has shown the same behavior before, prevent excessive approaching and standing to someone; speak less loudly, and allow customers to finish their talks before responses.

5. Given the positive effect of openness to experience on sales performance and the important role of experiences by sales personnel, it was recommended to reinforce openness to experience in sales personnel and recruit individuals with higher levels of experience who are interested in accepting new experiences. To encourage sales agencies to acquire new experiences, there is a need to motivate them and provide incentives for them in order to share their new experiences. This can be fulfilled through holding monthly meetings for sales agencies and sharing such experiences among all.

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**Primary Paper Section: A**

**Secondary Paper Section: AE**

# SEARCHING FOR THE NEW CULINARY EXPERIENCES AS A NEW TREND IN NUTRITIONAL BEHAVIOUR OF CONSUMERS

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**Abstract:** *The nutritional needs are the basic and the most important needs of people. However, nowadays, fastidious and bored consumers are searching for new experiences and sensations also in food area. The aim of this article is to identify the new culinary experiences, which are new trends in consumer nutritional behaviour based on secondary sources of information published over the period of 2009-2016. Across the studies covered by this paper it was found that the combination of consumers' needs and social, demographic and economic determinants had led to create some new food trends, such as food tourism, street food, food-trucks and food blogging.*

**Keywords:** *food-trucks, food blogging, street food, food tourism, consumer behaviour*

## 1 Introduction

Consumption of food is necessary for proper functioning of human body. Therefore, the nutritional needs, according to the key concepts and theories of human needs prioritized by famous scientists such as Maslow, McClelland and Alderfer, are considered as physiological needs and the most important needs of every human being. The fulfilment of these needs has significant impact on the development of further needs<sup>1</sup>.

Nutrition, besides satisfying hunger, satisfies much more various needs, such as respect, sense of security and belonging. Furthermore, the social and cultural environment, which human exists in, extends human nutritional needs by the elements of prestige or imitation<sup>2</sup>.

The nutritional behaviour of consumers is one of the forms of consumption and is associated with consumers' attitudes and ways of dealing with satisfying nutritional needs. They include the choice of food, the way of buying and preparing it for consumption, the time, place and people with whom food or dishes are usually consumed<sup>3</sup>.

Nowadays, consumers get bored very fast with taste and way of eating, so they look for new experiences in this area. They also search for the possibility to express feelings and experiences related to cooking skills and have some impact on other humans' lives. For these reasons, the popularity of food tourism, ethnic street food or food-trucks and food blogging increases rapidly.

The aim of this article is to identify the new culinary experiences, which are new trends in consumer nutritional behaviour based on secondary sources of information published over the period of 2009-2016. Article shows the specification of food tourism, street food, food-trucks, food blogging and consumer behaviour in these areas.

## 2 The food tourism

Nowadays, the tourism has evaluated. One of the reasons of that is the fact that people in move look for new and various destinations, which offer unique experiences. This creates new trends in tourism associated with increasing popularity of destinations, which are non-traditional and less-crowded. Modern tourists have different needs, they look for new sensations and experiences. In traditional meaning travelling

(especially cultural travelling) was associated with observing architecture, countryside or visiting museums, what engaged only one of the five senses – sight. It means, that other senses were not used enough by tourists, and their experiencing was limited. Therefore, contemporary consumers, who are more aware of their own needs, demand voyages where the other senses are also involved. Tourists wish to take part in some events, feel the atmosphere of the place and enjoy the local food<sup>4</sup>.

Food and tourism have strong connections. It has been estimated by various authorities which food is main tourism resource for. It is necessary for physical sustenance that all travelling people have to eat during journey, however, the searching for new taste experiences could become the major aim of their trip. With regard to advantages, food is associated with pleasure and entertainment, moreover, it has a social purpose. The eating habits can make a clear image of way of life and make it possible to understand cultural differences between countries.

Food tourism, which can be called culinary tourism, gastronomy tourism or tasting tourism<sup>5</sup>, is kind of response for increasing consumer interest in local food. Local products can be bought at local supermarkets or retailers as well as in farm shops and farmers' markets. Also restaurants serve food, which is prepared from local ingredients in order to add value to eating experiences and be updated with customers' preferences associated with local food<sup>6</sup>. The present interest in local food is related to the ethics, sustainability, environment and health awareness. More and more consumers feel obliged to support local economy and networks<sup>7</sup>. Furthermore, consumers prefer perceiving these products as fresher, tastier, of better quality, pure and traditional. There have been indications that phenomenon of interest in local food is observed not only among local consumers, but also among tourists. In each local food market people in move can find another experiences as every market is unique. The differences are caused by many determinants such as local culture, tradition, history, environment and socioeconomic situation, local consumers' nutritional preferences. Due to the food variation in every country the popularity of culinary-gastronomic food tourism is increasing<sup>8</sup>.

It is observed that food, local gastronomy and meals are often used in the places branding. Food and gastronomy are used as a significant component in creating some destinations more attractive for consumers. There have been indications that food and meals may be used for creating some atmosphere at the places as well as protecting and strengthening the identity of the place. Distinctive local or even national cuisines, which are used to reinforce the identity of larger regions or nations such as Thai, Russian, Greek, Italian and French cuisines can be assumed as good examples. Gastronomic tradition can be also treated as an element of historical heritage, which has the significant impact on place identity. The interesting example is Bangkok, where food markets and canal markets presenting Thai cuisine are main tourists attractions.

Food can also be used for changing the old image of a city. One example is the famous path, called 'fun walk' created in between railway stations to the Cape Town Stadium during World Cup in South Africa. Although 'fun walk' was created to solve traffic

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<sup>2</sup> Grzelak, A., Gałazka M.: *Relations between needs, demand and food consumption – a theoretical perspective*, Economic Annals of Kujawy and Pomorze University in Bydgoszcz nr 4, Publishing House of Kujawy and Pomorze University in Bydgoszcz, 2011. 40p.

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problem during the 2010 FIFA World Cup, it was transformed into place with numerous restaurants, food-trucks and cafes very fast.

Summarizing, the traditional tourism changed. Tourists have new needs, they look for new experiences, so the old aims of tourism such as visiting famous places or observing architecture and conventional destinations are less popular. Consumers search for new sensations; they want to involve all senses in discovering world. The above mentioned trend is used by some authorities, to encourage tourists to visit their areas. Especially food, meals and gastronomy are used in many ways to promote the image of cities, affect their identities or make them more attractive for visitors and persons, who look for place to live and work<sup>9</sup>.

### 3 Street food and food-trucks

Street food is very old custom, which is more and more popular in many developing countries. It is one of the most significant consumption patterns of urban life, mostly in developing world and very often it is one of the city attractions. The main factors of increasing popularity of this kind of gastronomy among consumers are busy lifestyle and long working hours<sup>10</sup>. Florida Department of Agriculture and Consumer Services (FDACS) defines the street food vendors as persons who sell food other than fresh vegetables or fruits from trucks or trailers<sup>11</sup>.

Food-trucks are the large vehicles, which are equipped to prepare and sell food. This kind of mobile restaurants has become increasingly common recently, especially in Poland. The characteristic feature of it is serving various and international cuisine. The beginning of the popularity of food-trucks is noted for 1600s. In those times, it helped to deal with feeding of workers during long cross-country cattle drives. The stew, roast beef, boiled potatoes and beans were generally served then<sup>12</sup>. Over many years this way of serving dishes has become very popular and fashionable. The main determinants of development of food-trucks are popularity of sport, touristic and cultural events, outdoor music concerts and historical reconstructions, which are associated with numbers of people in one place, where permanent dining options are usually not provided.

Food-trucks are essential in promoting cuisines of various countries, which are very often exotic for the natives. The average consumer has opportunity to try new tastes. One example is food-truck named 'La Chica Sandwichera', which is specialized in cuisine of Cuban emigrants living in Florida, USA. Another example is 'Carnitas Food Truck' the gastronomy company serving simple Mexican dishes, such as tacos and burritos with chilli habanero or guacamole<sup>13</sup>.

There are some indications, that street food and food-trucks are good alternatives for consumers who look for fast eating, new taste and saving money.

### 4 Food blogging

Looking for new experiences in eating does not always have to be associated with satisfying hunger. The result of some studies indicates that nowadays consumers look for a way which allows them to escape from temporary life, gain knowledge and

socialize. For this kind of individuals, eating and drinking is a wonderful opportunity to meet friends and enjoy their life<sup>14</sup>. That is the reason of growing popularity of food and wine festivals, cooking classes, culinary TV programs and writing and reading food blogs.

There have been few studies on food blogging as a serious leisure. Consumers are willing to share their culinary knowledge, skills and discoveries by writing about them. Blogs are kind of personal diaries online, composed of personal thoughts, advises, experiences, photos, links and images, with comments left by readers, generally organized in chronological order. The same rules are referred to food blogs. Food blogs usually represent authors' recipes created by gourmet, some culinary advises and photos. Majority of food blogs authors use their own photos. Many of them write cook books' reviews. Food blogging can be something more than writing about some culinary recipes. It might focus on some personal, emotional or physical matters and have impact on health, well-being and environmental human awareness<sup>15</sup>. Food bloggers can be treated as communities in local and global meaning. Foodie blogroll (www.foodieblogroll.com), one of the largest culinary portals, listed 16 938 blogs in October 2016 and more than 510 715 daily visits<sup>16</sup>. Whilst the majority of food blogs ought to probably be treated as a hobby and pleasure activity, there are lots of examples that food blogs have been successful and have come into cooperation with food industry, however it is probably rare for people to make a living from food blogging<sup>17</sup>.

### 5 Conclusions

Summarizing, nutritional needs are the basic and the most important needs of people. However, nowadays consumers are very changeable. Their needs and expectations are changing very fast, because of the fact that they are bored very fast. Consumers are searching for new experiences and sensations. Across the studies covered by this paper there have three areas been described: food tourism, street food and food-trucks and food blogging, which are examples of new trends created by consumers' behaviour on food market. Some conclusions have emerged across the studies. Firstly, the phenomenon of food tourism was created by consumers, who had deeper needs in discovering world than only visiting architecturally unique cities, who wanted to feel atmosphere, taste and smell of place. The consequence of this trend was using food, as one of the main attractions in some destinations. Secondly, the determinants such as busy lifestyles, long working hours and popularity of big cultural and touristic events led to an increase of consumers' interest in street food and food-trucks. Thirdly, searching for new experiences in eating can have different meaning than satisfying hunger. Sometimes consumers simply want to escape from mundane life, learn something new or make new acquaintances. They have also a need of expressing their feeling about cooking, boasting their cooking skills or having some impact on human awareness and healthy life, so they are writing a blog about food.

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## EXECUTION OF CRIMINAL MEDIATION IN IRAN: PRECONDITIONS AND CRITERIA

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**Abstract:** Today with respect to increasing cases proposed in Iranian courts, the criminal circumventions based on removal of adjudication and reducing responsibility for proceeding of cases in the courts have been officially recognized in laws of countries gradually out of which criminal mediation institution is deemed as one of them. This institution has been anticipated in Iranian and French criminal laws as substitute for prosecution and it has been highly addressed in order to decrease input of cases in courts. Country such as France has been pioneer to Iran in prediction of this substantial traditional method but with a modern title. For this reason, currently Iranian legal system is at initial phases for execution of criminal mediation where with respect to this issue, it is crucially important to interpret the needed executive practical points for better enforcement of this institution. Moreover, approval of new mediation procedure in criminal affairs along with execution points is helpful but ambiguous in some cases while background of execution with reference to law in French criminal law as a country as inspiring for this institution not only can contribute to remove ambiguities but also one can take step at least toward localization of enforcement of this institution with respect to this legal system.

**Keywords:** Criminal mediation, Execution model, Execution phases and process, Criminal procedure, Mediation procedure in criminal affairs

### 1 Introduction

The criminal mediation is a process that enables victim, offenders and other persons in society duly that have been impacted by crime to resolve actively and willingly the crimes through mutual talks and with assistance and presence of neutral third party (mediator). Criminal mediation which has been experienced officially for the first time at early days of 70s of twentieth century in Canada and USA now has been highly developed in various countries such as UK and France.<sup>1</sup> This process is trilateral or triple that starts regardless common formalities in criminal process based on prior agreement among plaintiff (delinquency victim) and culprit (delinquent) with the presence of a third party called mediator in order to settle various disputes and differences caused by perpetration of crime. The mediator is a member of a civil society (natural person or a non-governmental organization) that tries to communicate among offender-victim and pay the way for visiting and dialogue and talks and proposing of mutual claims and requests of both of parties and expresses their attitudes and problems for disambiguation and clarification of them in another language and thereby to help them to express their own cordial requests and to be reassured spiritually.<sup>2</sup> The theoretical basis of criminal mediation forms it modernly as new approaches of recognition of offenders-victim and attitudes based on restorative justice. Through these intellectual bases, criminal mediation follows several objectives versus cornerstones of criminal justice i.e. victim and offenders and members of community and system of criminal justice and it relies on general principles such as option, impartiality, independence, and privacy of mediation process versus each of these cornerstones and it approaches attitudes and interests of delinquency victim and delinquent and social institutes and their requirements together within a creative and efficient process.<sup>3</sup> Criminal mediation process includes four

steps in its most common form. These phases comprise of step for taking and reference of a case, stage of preparation for mediation, phase of mediation dialogues, and step of post-mediation measures each of which includes specific rules and principles. Comparing to other methods for dispute settlement, one of the advantages of criminal mediation is in that it possesses more flexibility with faster resolving of differences. Above all, it provides friendly resolving of disputes with mutual agreement and consents by both of parties so that to continue relations between them.<sup>4</sup> With respect to the unique principles and features<sup>5</sup>, criminal mediation follows some objectives which some of these goals belong to both of mediation parties (i.e. victim and offenders) and some of the other ones are related to human community relevant goals and motives and some to criminal justice system.<sup>6</sup>

With respect to above-said considerations and in this regard, given French Laws, execution of mediation will be analyzed within types of institutional executive models and then through their phases and finally with implication of executive constraints of criminal mediation where in this law-centered analysis some of practical experiences in aforesaid countries will be considered. This paper is also intended to smoothen typically the way better for execution of this institution in Iranian criminal proceeding system by interpretation of theoretical bases.

### 2 Background for acceptance of mediation at prosecution step

Since the middle of 70s at twentieth century, mediation plans have impacted criminal justice system. This process was manifested by initiative of one of the probation officers in Canada for the first time in 1977 and it was conveyed to other cities in Canada and USA.<sup>7</sup> The aforesaid probation officer suggested to a judge in one of cities in Ontario State to expose two young men who have been convicted to demolition to the delinquency- victims and after agreement of judge, issuance of probation verdict was subject to remove the damage and acquiring consent of delinquency- victims. After this experience, mediation was financially sponsored by the government and support intellectually by church and at the end 70s, it was conveyed from Canada to USA and then to Europe. Mediation that stems from paradigm of removal of adjudication through referral of differences caused by criminal phenomenon to mediation and acceptance of a type of arbitration in resolving of conflicts has possessed importance and position and played undeniable role in drawing participator policy of criminal justice.<sup>8</sup>

Fairness Houses in Iran entered into territory of criminal policy of Iran with approval of act for establishment of fairness houses in 1965.<sup>9</sup> Based on Article 1 of the given act, the goal of this institution was introduced as '... addressing and settlement of disputes between rural inhabitants...' According to Article 10 of the aforesaid law, fairness houses were tasked to settle differences and actions among rural inhabitants by compromise and reconciliation.... Thus, the given institution should create compromise between each of rural people and parties of criminal cases listed in Articles 12 and 14 using the existing restorative

mechanism for settlement of conflicts, Monthly of proceeding, vol. 101, December 2013 and January 2014

<sup>4</sup> Darvishi, Hoveida; Yousef, op. cit. p 92

<sup>5</sup> In order to achieve goals of its executives, mediation executes mediatory process based on the given rules and bases. Some of these principles include independence of mediation process, voluntary presence of delinquency- victim and delinquent in mediation process, observance of impartiality principle by the executives of this process, privacy and closed door talks between conflicting parties and principle of guarantee of execution of agreement between parties

<sup>6</sup> Abbasi, Mostafa, Criminal mediation, Daneshvar, 1<sup>st</sup> Ed., 2003, p 92

<sup>7</sup> For more study, see also history of this institution in France. See also Kooshki, Gholam Hassan, Alternatives for prosecution of general case in Iranian and French criminal proceeding systems, Quarterly of research in public law, vol. 29, summer 2010, pp. 327-350

<sup>8</sup> Samavati Pirooz, Amir, Restorative justice, gradual modification of criminal justice or change of it, Negahbineh Pub, 1<sup>st</sup> Ed., 2006: 123-125

<sup>9</sup> Zarkalam, Sattar, Advantages and disadvantages of mediation- arbitration similar to method of substitution of arbitration, Journal of bar association, new series, vol. 2, 2000, p 37

<sup>1</sup> Ashuri, Mohammad, Incarceration alternatives or interstitial punishments, Gerayesh Publication, 2<sup>nd</sup> Ed., 2011, p 287

<sup>2</sup> Najafi Abrandabadi, Ali Hossein, Implications of criminology lesson, by Mohsen Borhani and Amir Hamzeh Zeinali, 2003-4, p 15

<sup>3</sup> For more study regarding the relevant theoretical and legal frameworks to criminal mediation see also Najafi Abrandabadi, Ali Hossein, Mediation an effect of restorative justice, introduction written by Mostafa Abbasi, Modern horizons of restorative justice in criminal mediation, Daneshvar Pub 2003; Babaei, Mohammad Ali, Theoretical challenges of restorative justice and its effects in criminal procedure act, in Najafi Abrandabadi, Ali Hossein (supervised) (criminal news) (collection of essays), second book, Mizan Pub, 1<sup>st</sup> Ed. 2014, Hosseini, Seyed Mohammad, Mediating role in settlement of actions and response to norms, Journal of faculty of laws and human sciences University of Tehran, vol. 45, 1999; Darvishi, Hoveida, Yousef, A study on mediation as a friendly method for settlement of difference, Quarterly of law, Journal of faculty of law and political sciences of University of Tehran, series 41, vol. 1390, 41; Sadeghi, Mohammad Hadi, Mediation in criminal cases, Judicial and legal Journal of Justice Administration, vol. 12, 1994; Tale Zari, Ali, Criminal mediation as old

potential and capacities.<sup>10</sup> In 1966, following to approval of arbitration council act and its Article 13, criminal policymakers have officially recognized this institution so that in light of this process they could settle some of the given criminal cases in cities by taking restorative approach.<sup>11</sup> Based on Article 16 of amended act, reference to arbitration councils regarding criminal cases depended on attitude of plaintiff- delinquency victim. As a result, plaintiff could submit his/ her plea about occurrence of misdemeanors in written and or orally and directly to arbitration council.... After taking plea by plaintiff- delinquency victim typically as these councils discerned they addressed the criminal case and issued award with respect to contents of legal case without impact of culprit's comment about rate of response.<sup>12</sup> In fact, arbitration councils determined fate of criminal case as a restorative institute and for mediation and compromise only based on contents of case and by vertical approach.

Finally, criminal mediation has been explicitly anticipated in Article 82 of Criminal Procedure Code (2013. According to this article, *'Regarding discretionary crimes (degrees 6, 7, and 8) as suspendible crimes, judicial author may give maximally two months deadline to the culprit to acquire forgiveness or compensation for the loss caused by crime according to request of accused party and agreement of delinquency victim or private claimant and by taking appropriate security. Likewise, judicial authority may refer the disputing case to arbitration council or other person or institute for mediation in order to acquire compromise between both of disputed parties. Period of mediation will not exceed from three months. The aforesaid deadlines in this article will be extensible once if expired and with same interval. If plaintiff forgives the culprit and if subject is a forgivable crime, prosecution will stop. In other cases, if plaintiff forgives or his/ her loss is compensated and or they agree over payment of compensation while the culprit lacks effective criminal conviction before, the judicial author may require the culprit to execute some of orders as subject of this article with observance of provisions of Article 81 of this act as requires. Similarly, in the case of non-fulfillment of agreed obligations by the culprit without plausible excuse, prosecution suspension relief will be cancelled and prosecution continues based on request of plaintiff or private claimant.'*<sup>13</sup> *'Provision: Interrogator may demand judicial authority for suspension of prosecution or reference to mediation.'*

Criminal mediation is a method by deviation from criminal process that may be employed at any phase of litigation steps.<sup>14</sup> It is identified through review on different and various mediation plans that a single method is not used for reference of cases in different legal systems. Proportional to different proceeding systems and at various phases and authorities and exclusive references of criminal justice systems and strategies taken by them about restorative justice, the process of reference of case to mediation may vary.<sup>15</sup>

Overall, it seems that criminal case can be referred to mediation from the beginning of discovery of crime by police officials or it can be also referred to mediation at prosecution or investigation phase and or at litigation step and issuance of award and or at process of enforcement of order and even after execution of award so each of different systems have accepted a specific techniques and certain step for referring a case to mediation. Anyway, the crime cases can be referred to mediation at different phases depending on their type and governing

circumstances and positions and rule over criminal proceeding system. While as usual regarding more important crimes and files, the cases will be referred to mediation the time after litigation and even times after enforcement of punishment and or some part of it. For example, in some countries e.g. Canada, right of mediation is given to conflicting parties even regarding hostile and important crimes such as sexual harassments, inchoate to murder, after incarceration of delinquent and passing some part of it.

Today one of the main and major orientations off criminal procedure has been dramatically transformed and several strategies have been created for extension and developing restorative techniques through criminal process.<sup>16</sup> In this sense, French criminal law executes the following measures by virtue of the first part of Article 41-1 of Criminal Procedure directly by city prosecutor or by officer of judicial police or prosecutor delegate<sup>17</sup> or mediator.<sup>18</sup> On the strength of the headline of French criminal procedure, city prosecutor may decide using mediation<sup>19</sup> before starting prosecution to general case in order to compensate for the loss incurred by victim and to terminate disruption created by crime and also for probation of offender. Therefore, prosecutor is competent to initiate for making decision to mediation.

### 3 Execution of mediation within types of institutional executive models

From perspective of criminal policy and type of execution of mediation in various countries, criminal mediation can be generally separated into three types.

**3.1 civil criminal mediation:** In fact, this type of criminal mediation is executed by initiative of civil society and through inspiring from usual models in norm and local and national public culture and norm for resolving consequences due to perpetration of crimes with no intervention and comments of judicial authorities. The first practical mediation experiences were created by inspiring from common arbitration among these tribes to settle differences.

Also our country as a land with ancient civilization has exercised several quasi-judicial public customs prevalent among the given various tribes.<sup>20</sup> These plans along with formal system of criminal justice are also employed for resolving problems and differences caused by perpetration of light offences and even serious crimes today in some places that may strike a type mediatory paradigm and method in minds. Today due to deficiencies of formal system of criminal justice it seems people tends increasingly to civil judicial procedures such as civil mediation. This technique is also growingly increased in French criminal law. This type executive model has been converted into a citizenship task and it is followed endogenously and of course organized and in full civil form. However the reason for welcoming to this method may slightly vary in two countries. In Iranian law, probably presence of traditional methods and also reduced efficiency of justice administration system has been led to this process and this may be also followed by lack of trust in justice system while in French law this traditional background may be downplayed for mediation technique, impression of mediators also typically contributes to justice system and not to non-confidence. Accordingly, it can be found through this model that our national law acts toward implementation of civil method with the given traditional background and it assumed as an informal method. This implementation is also accompanied to lack of knowledge of formal criminal system about these crimes for which this method is utilized among tribes in various parts of Iran such as Khuzestan to some extent. However in French law,

<sup>10</sup> Rahgosha, Amir Hossein, A glance at arbitration councils, Daneshvar Pub, 1<sup>st</sup> Ed. 2003, p 23

<sup>11</sup> Gholami, Hossein, Restorative justice, Criminal sciences (A collection of essays in memorial of Prof. Dr. Mohammad Ashuri), SAMT Pub, 1<sup>st</sup> Ed. 2004, p 209

<sup>12</sup> Jamshidi, Abbas, Analysis on legal position of arbitration councils as subject of Article 189 of third development plan act, MA Thesis, faculty of law, Shahid Beheshti University, 2004, p 60

<sup>13</sup> Following to Article 83 of this act, it holds in this way: 'Result of mediation will be signed by mediator and both of parties in detail and by implication of the related causes within the minutes and it will be sent to the relevant judicial authority for review and verification and taking subsequent measures as it requires. In the case of mutual agreement, it necessitates implying obligations for both of parties and how to fulfill them in the minutes.'

<sup>14</sup> Najafi Abrandabadi, Ali Hossein & Hashem Beigi, Hamid, op. cit., p 218

<sup>15</sup> Abbasi, Mostafa, op. cit., p 125

<sup>16</sup> François Altmois, Arbitration of criminal law: a myth or reality?, translated by Reza Farajollahi, Legal journal of justice administration, 2006, 165. In this regard see also Najafi Abrandabadi, 2003, p 3, Ibid, 2003, Shiri, 2006, ibid, 2007, p 17

<sup>17</sup> Délégué du procureur

<sup>18</sup> Le médiateur Rappel à la loi

<sup>19</sup> La médiation

<sup>20</sup> Atashneh, Mansur, Arbitration rule between Khuzestan Nomads, MA thesis in penal law and criminology, University of Tehran, 1991, p 52

it is seen in civil form with encompassing supervision by judicial system by entirely by initiatives of persons and civil institutions.<sup>21</sup>

**3.2 Civil criminal mediation under supervision of judicial authorities:** This type of mediation became initially prevalent in form of arbitration in civil law but during recent years it has been also entered into criminal law under some circumstances. Judicial actor attends in this model in two times. Primarily, he enters upon appointment of mediator to start mediation process and then at the end of this process to analyze results of mediation which have been signed by delinquency victim, delinquent, and verification of mediator within an agreement.<sup>22</sup> This type of mediation seems to be applicable in all steps of criminal proceeding namely prosecution phase at official court, court substantial proceeding step, and phase of execution of criminal punishment such as punishment for freedom confinement and if both of parties agree over this process, proportionally process of legal case will exit from criminal proceeding system and archived so that to issue award up to conviction with mitigation and some modifications and facilities will be created in favor of convicted party at phase of enforcement of given sentence such as imprisonment. Criminal mediation has been anticipated as an alternative for prosecution of culprit at phase of criminal prosecution in French criminal law in which if prosecutor discerns that the culprit possesses some qualifications such as compensation of loss by delinquent for the victim and removal of local concern due to perpetration of crime and punishment of delinquent and this fact that the culprit has been social probated, mediation is accepted only at prosecution phase based on contents of criminal procedure (2013) of this type and by virtue of Article 82 regarding acceptance of civil process supervised by judicial authority. Accordingly, the prosecution phase is relatively similar in both criminal systems within the mediation phase as well. It has been stipulated in Article 35 of Mediation Procedure for Criminal Affairs that 'The relevant judicial authority is necessarily responsible for monitoring mediation process as the given criminal file is referred to him.' Such supervision has even become more prominent since Article 37 of this procedure holds that 'In the case of absence of parties in mediation sessions and mediator's report about lack of potential for holding of mediation sessions, the referent judicial authority to mediation will cancel this measure and continue litigation.'

**3.3 Judicial- police mediation:** This type of criminal mediation is inter-system or judicial- police mediation and it does not belong to civil society. Based on practical conduct, and by virtue of law, mediator who is one of official authorities initially focuses his effort in creation of compromise and reconciliation among victim and delinquent.<sup>23</sup> Also one can assume task expressed for the court in Article 192 of criminal procedure (2013) as examples of this type of mediation. Similarly, compromise and reconciliation units are established in justice administration centers which are responsible for referring the case to the court in order to encourage and invite both of parties to compromise and also the counseling districts and social-working units stationed in some of police offices which exclusively try to create peace and compromise among victim and delinquents in forgivable crimes that can be assumed as some examples in this type of mediation. Similarly, reference the case to arbitration council mentioned in Article 82 since it can be deemed as a type of judicial institution unlike philosophy of existence (*raison d'être*) for this unit, arbitration council is a type of judicial institute. This measure in police- phase is mainly applicable among common law legal systems e.g. in UK. Of course, this question may be raised here that if one can refer a legal file to police for peace and compromise resulting from mediation or not; it seems there is no legal bar in this regard but it necessitates assertion and determination of framework to make executive process more accurate. In Article 2 of mediation

procedure in criminal affairs, it has been confirmed typically in judicial mediation and held: The mediation related affairs may be organized under supervision of general prosecutor of revolutionary public court or head of judicial district in site. Prosecutor or head of judicial district may assign this task to one of his deputies. Then by considering Article 3 that denotes that legislator has officially recognized a type of modern model of mediation within administrative mediation for which it has been mentioned in this article that it is not legally banned to refer to mediation in some cases when public departments and systems are as plaintiff based on observance of rules and regulations.<sup>24</sup>

#### 4 Execution of mediation within certain deadline and time its effectiveness

In Article 82, legislator asserts explicitly that 'mediation deadline may not be longer than 3 months and if expired and the stipulated period may be extended for once.' Also in other countries, enforcement of this constraint is seen in other countries e.g. Canada where they have given 60days deadline but this period can be extended by written agreement of both of parties and in the case of non- consent in one of parties criminal mediation will be deemed as failed at the end of this mediation period and proceeding will be continued formally and according legal criteria. Thus, delinquent may ask forgiveness from victim and pay compensation of loss for the victim of delinquency and or acquire his/ her consent to give further deadline unless formal litigation will be continued.<sup>25</sup>

Concerning to time of enforcement of criminal mediation, it necessitates implying two other points: one is that in which interval any mediation session should be held; secondly, how much time these session should last. Primarily it should be implied that no relevant point has been mentioned in this regard in Article 82 but according to Article 15 of act for referring affairs to mediation 'the mediator shall start mediatory tasks as soon as possible after referring the subject on behalf of judicial authority and hold mediation session or sessions not later than stipulated time by judicial authority<sup>26</sup> and prepare the minutes from report of his activity and comments of parties and the result of session.' It seems that judicial authority is responsible for determination of deadline to holding mediation session but probably this deadline is three months stipulated in Article 82. Nonetheless, it seems this session should be held within deadline specified by the judicial authority (that is certainly obvious) but it seems the mediator is responsible for determining number of sessions and period of holding any session.

#### 5 Conditions for execution of criminal mediation

There should be some qualifications for execution of mediation of course. Primarily, it should be mentioned it is possible to issue mediation order for all crimes in terms of domain of execution of mediation and with respect to goals listed in headline of Article 41-1 although mediation is practically executed for disputes between families and neighbors and related persons to each other.

**5.1 Necessity for consent and agreement of parties:** It is surely necessary to take consent and mutual agreement among disputed parties in order to refer parties toward resolving the present

<sup>24</sup> In other cases of this procedure for referring affairs to mediation other aspects of judicial mediation can be observed:

Article 8- Judicial authority may refer criminal subject to an institute for mediation. Thus, the head of given institute will be accountable to the judge for mediation.

Article 9- A list of qualified persons who are competent for mediation will be prepared in any judicial district by heads of judicial district. Preparation of this list is solely for determination of priority and it does not bar mediation to others.

Article 10- The addressing judicial authority will be responsible for ascertainment of competency in mediator after mutual agreement.

<sup>25</sup> financial services commission of Ontario; online: [www.fscsco.gov.on.ca/en/drs/pages/meclaton.aspx#ten](http://www.fscsco.gov.on.ca/en/drs/pages/meclaton.aspx#ten)

<sup>26</sup> Article 30 of act regarding referring of affairs to mediation: implausible negligence and delay of mediator in holding mediatory sessions and about holders of mediation licenses will be subject to written warning and written reprimand and annulment of mediator's permission (license). Regarding persons without license, omission in doing of assigned tasks will lead to excluding him/ her from the given list based on discerning of the reference by the related judicial authority and it will be acted concerning councils according to the related regulations.

<sup>21</sup> Ibid

<sup>22</sup> Najafi Abrandabadi, Ali Hossein, Mediation, An effect of restorative justice, op. cit. p 16

<sup>23</sup> Najafi Abrandabadi, Ali Hossein, Criminal mediation: modern effect of restorative justice, op. cit. p 18

difference among them. Therefore, mediation will fail if either of disputed parties is not satisfied. Also it has been emphasized on requisite for achieving mutual agreement among parties in Article 82 and this condition has been inspired from French criminal law since by virtue of Clause 5 of Article 41-1 in criminal procedure mediation is employed among crime perpetrator and delinquency- victim in mutual agreement was achieved among between two parties. In the case of achievement in mediation, city prosecutor or mediator prepares minutes from this session that will be signed by him and disputed parties and a copy of minutes is given to them. If crime- perpetrator has been pledged for compensation of damage exerted to delinquency victim with respect to the minutes, the given victim can request for payment of compensation following to award of court and based on rules of civil procedure. In any case, mediation is deemed as a civil litigation under control by judicial rules.<sup>27</sup> In other words, although both of disputed parties make decision and agree mutually on the platform of unofficial formalities but in the case of failure, formal measures in criminal procedures will govern. Importance of mutual agreement among parties is also implied in Article 6 of act regarding reference of cases to mediation: 'Mutual agreement between disputed parties to refer mediation for which judicial authority prepared minutes will be signed by them.' Even such importance also emphasizes in this point that 'if both of disputed parties mutually agree to introduce a mediator and the given mutually agreed mediator accepts to mediate between them, the mediator will be responsible for this process after confirmation of judicial authority. The judicial authority may independently take measure if two parties do not appoint a mediator.'

**5.2 Taking security:** Surely, taking criminal security has different effects on its trend before reference of mediation and making mediation method dependent on criminal justice system. This constraint may cause the delinquent to imagine constantly this point on the one hand that through reference of mediation s/he will be still within the range of criminal justice and not to exit it since as it obvious this type of file reference will not entirely cause separation and isolation of informal proceeding from formal litigation in justice system. For this reason, the delinquent may not duly cooperate with them as it deserves to mediation method since s/he may see any type of cooperation for proving crime against oneself and s/he will avoid this method to escape from legal consequences of acceptance and confession to the given delinquency. In addition, some benefits can be implied for taking security before referring of file to mediation including this fact that it may encourage delinquent to cooperation and acceleration in achieving amnesty and agreement of victim since if s/he does not make the best efforts for agreement with the victim s/he will be exposed to criminal justice system. On the other hand, whereas delinquent should attend for making final decision before official authority of litigation, issuance of relief for taking security will prevent from his/ her escape and/ or hiding.

If mediation system and model is based on judicial type, it is natural to determine constant supervision by judicial authority over various parts of this process. While is it necessary to issue criminal security relief before referring of case to mediation? The answer can be perceived easily in Article 82 of new criminal procedure. Legislator expresses two method of exit from formal proceeding in two initial parts of this article regarding the same crimes under identical conditions. The first part of this article explains about possibility for giving deadline to culprit to acquire consent of victim or compensation for his/ her loss and damage and it has assumed the same crimes under the same conditions as referable to mediation at second part of article. Therefore, judicial authority can refer it to ... in discretionary crimes (degrees 6, 7, and 8) where their punishments are suspendible by *taking appropriate security* and through mutual agreement over subject between two parties. On the other hand it

is also characterized at the end of article that whatever the mediation results in, the competent legal authority will make final decision. Thus, we will need to presence of culprit since in the case of successful mediation at the end of file and if committed crime is forgivable, judicial authority will issue decision not proceeding of the case (*nolle prosequi*) so that according to specific legal formalities, this relief should be notified and if the committed crime is not forgivable, prosecution of culprit will be suspended by ascertainment of other conditions.<sup>28</sup>

## 6 Execution of mediation within phases and mediation execution process

By virtue of Clause C of Procedure of Mediation in Criminal Affairs, mediation process<sup>29</sup> is defined as follows: 'it includes a group of measures by which through administration of mediation with the presence of victim and culprit and other effective persons in acquisition of compromise in f necessary such as family members, friends, or their colleagues and also duly members of local community, the competent official and public institutions and or NGOs discuss and exchange their views to resolve differences and if they achieve agreement, they draw up agreement and it is sent to judicial authority.' This process starts if the needed qualification exist to begin execution of mediation where it varies in terms of type of process and the related phases depending on type the accepted model and whereas presence of victim, delinquent, and mediator is necessary at least for execution of mediation plan often execution of mediation consists of four steps we will examine them each of them separately and briefly in the followings:

**6.1 Phase of receiving or reference of case:** Based on way of performance of mediator, this step is taken in both of active or voluntary and/ or passive and involuntary forms. In *active or voluntary* method for referring of cases, mediator personally selects files and asks the judge or related prosecutor for referring it to this purpose. This method is executed with respect to various criteria including when the crime is not serious and basically crimes were committed against properties and delinquency- victim is identified and his/ her request and requirements are also determined and s/he agreed mediation while delinquent has assumed it as his/ her responsibility and or asked for mediation, personal and familial conditions of delinquent may indicate possible success in mediation at high level and... each of these conditions may essentially impact on way of reference.<sup>30</sup> In passive method of file reference, executives and officials of mediation plans (mediators) are not involved in process of file reference and this process should be independently controlled by the relevant judicial authority. Although this method also includes specific criteria in reference of cases and usually expertise and experience of mediator and conditions of victim and delinquent are also addressed, this method is not basically successful and few cases are referred to this technique in this way as well. Article 82 and the related procedure have also confirmed this method.

Given criminal mediation is at the prosecution phase in Iranian criminal law and prosecutor is also responsible authority for

<sup>27</sup> In this regard see also: Sharifzadeh, Ali, Analysis on concept of role and position of local society in mediatory processes and arbitration councils, Quarterly of studies on prevention from crimes, Police periodical of prevention (IRI Police), 2<sup>nd</sup> year, vol. 2, 2007; p 101

<sup>28</sup> It is observed that in any case culprit should be accessible whether *nolle prosequi* relief is issued and served or in order to issue *nolle prosequi* for suspension since because it necessitates agreement of delinquent for issuance of *nolle prosequi* relief as legislator implies and this relief may not be issued if s/he is not present. On the other hand, as it mentioned, legislator relies on taking proceeding by formal techniques and has not shown inclination to litigation by informal method. This case also verifies the requisite for issuance of security relief before referring of file to mediation. Thus according to new criminal procedure, culprit should be kept under control of justice system but the case should be resolved by a technique rather than what it common for his/ her crime and the related subject.

<sup>29</sup> The interesting point that can be added relating to body of Article 17 of procedure is that 'During mediation process, it is assumed there is dialogue between parties and they attempt for exchange of view and acquire agreement. Mediator is responsible for managing and facilitating this process. Mediator should do his/ her task impartially and within limits of legal powers and mediator should not threat or compel either of parties in order to achieve agreement and signing it and should act in such a way in managing sessions among plaintiff and culprit that the victim not to be again subject to delinquency and two parties should talk to each other respectfully and without resorting to threat and hostility.'

<sup>30</sup> Gholami, Hossein, op. cit. p 126

prosecution accordingly power for reference of case to mediation have been allocated to prosecutor's power. In addition to presence of the article relating to subject of mediation in part of tasks and powers of prosecutor, concerning demand for reference to mediation by interrogator from prosecutor in provision of Article 82 denotes this point that the interrogator is not entitled to refer the case and he can maximally put his evidences for referring it to mediation at disposal of prosecutor and ask him for this case.<sup>31</sup> It is a matter fact that if the court is responsible for preliminary investigations<sup>32</sup>, then it is obvious the court will be the referent authority of these files. Therefore, according to new code of criminal procedure in our proceeding system, it is possible to refer the case to mediation and other reconciliatory and compromising units only at the phase of prosecution and primary investigations. In French criminal law, prosecutor makes decision for mediation to realize aforesaid goals in Article 41-1.

**6.2 Phase of preparation for mediation:** This phase includes preparation of initial bases for mediation and creating arrangement and acquiring readiness for starting mediation consists of two parts.

Firstly, communication unit: Mediator communicates with delinquent and then victim in this part and does the needed coordination and arrangements. In this regard, in fact mediator talks about mediation plan and time of execution of plan with parties and asks them for comment in order to acquire their agreement and or disagreement about participation in mediation and way of their consent as well as their experiences of occurrence of crime and to find their requests and requirements. Emphasis in condition for acquiring agreement in Iranian and French laws is for this purpose.

Secondly, it is unit of *preparation of arrangements for mediation meeting*. After mediator acquired the needed information through communication with victim and delinquent and if they agreed to participate in mediation plan the mediator will tend to prepare mediation arrangements and take measures such as notifying time of holding session, place of session and the execution arrangements for execution of plan. It has not been mentioned about quality of sessions and their place in criminal procedure and the related code to mediation while quality and location of holding session may also essentially impact on better execution and efficient outcomes of mediation more than ever.

**6.3 Mediation meeting phase:** Doubtlessly, the foremost part in mediation trend is the meeting phase since at this step mediation plan is executed and delinquent and victim are exposed to each other and they propose their requests and needs; both of parties talk to each other and hear statements of other party and express their questions. This plan is managed by mediator and although according to attitude of some experts and presence of at least two mediators is preferred<sup>33</sup>, this point has not been implied in law and although it seems apparently presence of one mediator is adequate, it does not seem there is any bar for use of more than two mediators. Additionally, this procedure exceeded from this point in a case when it is possible to invite some persons who are not necessarily mediators but their presence may be useful for outcome of mediation. Accordingly, by virtue of Article 19 of procedure, 'If necessary, mediator may invite family members, friends, colleagues, neighbors, and other persons including local community for presence as mediator discerns or if based on demand of either of parties their presence is helpful in mediation session.'

Mediator or mediators will impartially listen to requests and statements of disputed parties and managed session favorably. Similarly, it necessitates for mediator to possess adequate experience and skill to manage trend of dialogue and stream of mediation in order to achieve favorable outcome. Likewise, mediator can propose a suitable solution to them if s/he has needed power and in the case of failure in achieving a mutually agreed solution.<sup>34</sup>

Language and literature of mediator should be appropriate to conditions of participant party<sup>35</sup> so that communication is peacefully established among victim and delinquent and they should find mediator as one who can resolve their dispute. In order to determine sanction for impartiality, it has been stipulated in Article 21 of procedure that 'receiving or promise for receiving of any property, fund, benefit or advantage from both of disputed parties by mediator will be forbidden except what it stipulated in this procedure and in addition to addressing legal liabilities, it is led to divesting of his/ her competency for mediation.' However no point has been implied about necessity for having experience and also way of interaction with disputed parties and it has been solely emphasized in attestation of mediation and only trainings were deemed as adequate.

Following to realization of these conditions where this phase aims at arranging mutual dialogue and expression of circumstances and conditions of criminal environment as well as the related effects and consequences on life of victim and delinquent and their families and proposing questions and finding appropriate answers directly from victim and delinquent, expression of feelings, spiritual and mental discharge this goal is fulfilled by restoration of damages and losses within a bilateral contract<sup>36</sup> because mediator does not only attribute the fault but he enables them favorably to find roots of differences and then they can achieve agreement by discussion and exchange of views which are in the course of regulation of future behavior and also resolving their problems in the past.<sup>37</sup>

**6.4 Phase of follow-up the results:** At this step, we examine the agreements and contract among delinquent and victim and the problems and barriers are resolved for achieving the favorable outcomes and the way is smoothly paved toward mediation point. In other words, following to execution of given agreements at this step, quality of progress in this plan is observed and if some problems are created in execution or interpretation of contract through contact to parties for settlement and as a result achievement and fruitful mediation is guaranteed.

Depending on method of execution and implementation of former steps, this phase requires several measures for which mediation session may be still necessary for removal of some problems but whereas criteria may be provided for a friendly visit and dialogue and conversation at this step so it can be effective on more successful trend of execution of agreements and it will be followed by more viable positive effects on victim and delinquent. The goal of holding session should be explicitly expressed in this visit so that both of parties not to start committing the crime again out of this process by discussion and dialogue. It is unlikely at this step that parties do not agree to attend in the second session. Thus, mediator shall arrange another session for their presence and or if it is possible mediator should contact both of parties by phone call to achieve secondary executable agreements.

At the end, it should implied that execution and enforcement of mediation is not restricted this this method and the mediation may be arranged and organized even without observance of

<sup>31</sup> Provision- Interrogator may ask the prosecutor for suspension of prosecution or referring to mediation.

<sup>32</sup> Article 340- Discretionary crimes (degrees 7 and eight) will be directly proposed in the court.

Article 306- Crimes such as fornication, sodomy, and other crimes against indecency will be addressed directly in competent court.

N. B.1 of Article 285- The primary investigations will be directly for all of crimes committed by persons under age fifteen at juvenile court and the given court will do all tasks for which bailiffs in justice administration and prosecutor's office are responsible according to law.

<sup>33</sup> Ibid, p 137

<sup>34</sup> Kristen Woods, Fundamental elements of mediation: Kristen Woods- fundamental elements of mediation [http://www.riverdalemediation.com/pdfs/learn/adr/Kristen Woods.pdf](http://www.riverdalemediation.com/pdfs/learn/adr/Kristen%20Woods.pdf).

<sup>35</sup> Gholami, Hossein, op. cit. p 128

<sup>36</sup> Abbasi, Mostafa, op. cit., p 189

<sup>37</sup> Najafi Abrandabadi, Ali Hossein, Hashem Beigi Hamid, Encyclopedia of criminology, Ganj-E-Danesh Publication, 1996, p 219

given conditions and only within a few hours dialogue.<sup>38</sup> It is because there are very numerous techniques and experiences in this regard. In any case, the procedure has addressed only subject of drawing up the minutes<sup>39</sup> and it has not been anticipated task of follow-up the results for mediators and this may impact on useful execution of this institution.

## 7 Conclusion and suggestions

Today due to deficiencies of official criminal justice system, public tendency is growingly toward civil judicial procedures such as civil mediation. This method is also going to increase in French criminal law. This type of executive model has been turned into a citizenship task and it is followed endogenously and of course in organized and totally civil form.<sup>40</sup> However the reason for welcoming this method may slightly vary in two countries. Perhaps presence of traditional techniques and also reduced effectiveness of justice administration system has been led to this process in Iranian law and this may be also followed by lack of trust in justice system as well while this background is downplayed for traditional methods in French law per se and mediators' paradigm is typically contributive to justice system and not to non-confidence.

Occasionally, one can also imply non-confidence of legislator in execution of mediation by looking at body of law and approach of legislator. For example, although there are numerous punishments in law that can be referred to mediation and several crimes can be found for which punishments are classified in this group, anyway the enforced constraint is not too small in this regard. The crimes with this rate of punishment are not clearly too important and they may not also create disruption in public order. These conditions characterize legislator's approach toward a lot of mistrust in informal method and their high reliance on formal method in criminal justice system.

One can consider legislator's mistrust in respective of limitation of criminal mediation anticipation and or great role of discerning by prosecutor's position at the beginning of process for the execution, ambiguity in prediction, and arrangements for execution as the barriers against proper execution of this institution. No point has been mentioned about quality of mediation and their sessions and location in criminal procedure code the related procedure to mediation while quality and location for holding session may essentially impact on better enforcement and efficient outcomes of mediation more than better per se. Execution and enforcement of mediation is not limited to any certain method and mediation may be arranged and organized even without observance of the given conditions and only within a few hours of dialogue for mediation since there are a lot of various techniques and experiences in this regard. Anyway, this procedure has only addressed subject of drawing up the minutes and it has not anticipated the task for follow-up the results for mediators and that is something influences in useful execution of this institution.

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<sup>38</sup> Abbasi, Mostafa, op. cit., p 169

<sup>39</sup> Article 25- Mediator shall draw up terms of mediation minutes and briefly reflect them and put them for signing by parties. In the case of refusal by either of parties, the subject will be listed in minutes by the mediator.

N. B.1- General status of victim and mental, physical and financial effects of crimes against him/ her as well as repentance or excuse of culprit and also his/ her attempt or lack of efforts to compensate for effects of crime and reassurance of the victim should be mentioned in report of mediator.

N. B.2- Mediator shall draw up details of agreement between parties by implication of all their details, obligations, and rights in written without ambiguity and after arraigning to parties who sign it.

<sup>40</sup> For more study see also lecture by Ali Hossein Najafi Abrandabadi, meeting in University of Tehran, under title of criminal mediation, 2016

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## Summary of Primary Paper Sections: A

## Summary of Secondary Paper Sections: AG

## EVALUATION OF THE RELATION BETWEEN TRANSFORMATIONAL AND TRANSACTIONAL LEADERSHIP STYLES WITH STAFF PSYCHOLOGICAL EMPOWERMENT IN THE BANKING INDUSTRY

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**Abstract.** The population of this research includes the headquarters staff of the Agricultural Bank with bachelor's degree or higher in Tehran which amounted to 420 persons. In order to collect data for this study Spritz Psychological Empowerment Questionnaire (PEQ) has been used and to assess the leadership styles, Multifactor Leadership Questionnaire (MLQ) and also to assess the innovative behavior, counter innovative behavior questionnaire have been used. Based on the results of data analysis of the present study there is a significant relationship between transformational leadership with all aspects of staff psychological empowerment. Also according to the results we can see that there is a significant relationship between transactional leadership styles with aspects of staff psychological empowerment.

**Keywords:** Transformational leadership, transactional leadership, psychological empowerment

### 1 Introduction

Quick environmental changes threatening the life of many organizations. The global economy has driven forward by the regional economic pressures, new media and new information technologies, global consumer culture, the emergence of global standards and the possibility of sharing the costs, are effective environmental changes that exist in today's organizations. The survival of many organizations is threatened by compromising with environmental changes. Environmental evolutionary theory is because of that variable and uncertain environments demand different organizations which benefit high flexibility with environmental changes (Cunningham, 2006). Doty (2008) believe that nowadays the main source of competitive advantage does not lie in technology, but rooted in the dedication, quality, commitment and ability of labor force. Of the most important resources of an organization can be traced to the results of mobility and creativity of its employees and empowerment is the new stimulant of this growing work environment. Researches indicate that Organizations achieve benefits such as increasing job satisfaction of members, improve the quality of working life, improving the quality of goods and services, increasing organizational efficiency and competition preparation by doing the empowerment process (Bradley & Kauanui, 2003). On the other hand, effective leadership style is an integral part of

creating the environment of nurturing of enabling staff. Unlike the autocratic managers who step in order to further weakening of subordinates, capable managers act as conductor, manager, and facilitator and coach (Fry & Matherly, 2005). In fact, the role of managers and leaders in fundamental changes and developments in the organization is inevitable. Every day new theories of leadership open new horizons in the management of organizations and the way of their movement in the path of growth and development and provide the necessary knowledge to managers and leaders to deal with environmental changes. From new styles of leadership can be noted to the transformational leadership, transactional and non- interferer styles. According to the importance of staff empowerment in organizational development and improvement and the importance that leadership styles have in the attitudes and behavior of employees so that in new management literature, leadership be remembered as the art of the empowerment of others (Momeni, 2004).

So we can have this question in mind that what relationship exists between leadership styles (transformational leadership, transactional and non- interferer and psychological empowerment)? Which leadership style is desirable for staff psychological empowerment? The purpose of this research is determining the effect of each of leadership styles (transformational, transactional and non- interferer) on staff psychological empowerment and its dimensions (Includes: feeling of meaningful on the job, competence feeling on the job, the feeling of having a choice, effectiveness, and the feeling of fellowship with others).

### 2 Research theoretical model

For the formulation of research hypotheses, each researcher needs conceptual model so that in addition to identify variables of assumptions, explain the relationships between these variables and their conceptual and operational definitions. On this basis, According to leadership attributes (transformational, transactional and non- interferer) Presented by Bass & Avoulio as well as psychological empowerment which is based on scientists pattern such as Batmn and Oregon (1983), Smith, Organ and Nir (1983), Podsakoff, MacKenzie, Moorman (1990), Williams and Anderson (1991), Mvtvvydlv and Van Scooters (1994), Van Dyam Graham and Dyansch (1994), Moorman and Blecki (1995), Van scooters and Moto Vidlo (1996), Farh Earley (1997) and Van Diane and Lypon (1998), Which has been developed according to Iranian culture, we provide the conceptual model and its assumptions.

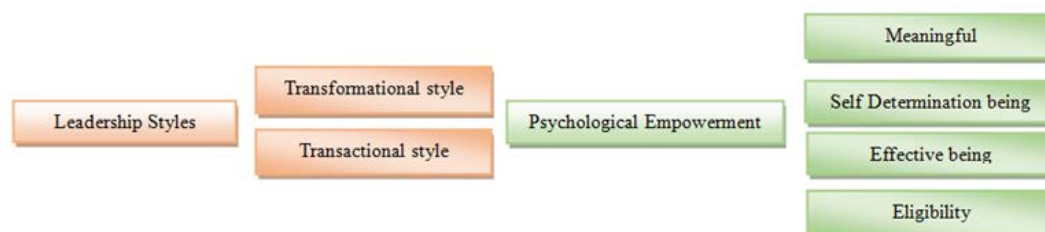


Figure 1: research theoretical model



## 2.1 Research Hypothesis

1. There is a significant relationship between transformational leadership styles with dimensions of psychological empowerment (Meaningful, Self Determination being, Efficiency, Eligibility).
2. There is a significant relationship between transactional leadership styles with dimensions of psychological empowerment (Meaningful, Self Determination being, Efficiency, Eligibility).

## 2.2 The theoretical definitions

### Transformational leadership style

Transformational leadership is a complex and dynamic process in which leaders influence the values, beliefs and the goals of the followers. Peter Senge knows the transformational leadership as one of the most important elements of creating learning organizations and knows them leaders have the ability of drawing new necessary routes for new organizations. This type of leaders is the source of changes. Transformational leaders influence in attitudes, values, and the goals of followers and known as heroes and have a tremendous effect on their followers. Transformational leaders provide a tremendous incentive through confirming ideas and moral values of employees and inspire them to think about issues using modern methods, (Mirzaee, 2008).

### 2.3 Transactional leadership style

Transactional Leadership which derived from the theory of leader-member exchange, first has raised by Green Haga in 1975. This theory has put the social relations between leaders and followers the central point in the process of leadership (Hamidi, 2000). According to Bronze (1978) transactional leadership is the leadership based on the exchange between leaders and follower so that the individual wishes of the parties will be provided. In other words, he believes in this view, everything is seen in terms of the benefits which will accrue to individuals and relationship between the leader and followers is speculative and based on the exchange of one thing for another thing (Momeni, 2004).

### 2.4 Meaningful feeling in job

It is the value of career goals which will be judged in relation to standards or individual ideals. This means that person treats valuable the task he performs, in fact significance includes correspondence between the requirements of the role and work of one hand and the beliefs and values and behaviors from the other hand (Peterson, 2008).

### 2.5 Sense of competence in the job

Competence and personal efficacy, is the belief of the person to his ability and capacity to do the skill works. Deserve is something like operating beliefs, personal ability or effort-expected performance (Balliett, 2011). Empowerment as a motivational built by increasing self-sufficiency of individuals encourages them that mobilize the motivation, cognitive resources and set of the necessary measures to control in Events in their selves (Cavanagh 1999).

### 2.6 The feeling of having a choice

Deci & Ryan Found that existence of Self Determination feeling in people will cause flexibility, creativity, initiative, self-control and quick response, on the contrary, its absence will hurt the self-esteem. Self Determination as a motivating factor, as Herzberg predicted will follow increasing in job satisfaction. The choose right also provides the possibility of controlling people over some of the stressors factors and thereby lead to reduce occupational stress (Hartshorne, 2005).

### 2.7 Efficiency feeling

It is the extent in which person has the ability to influence the strategic, administrative or operational consequences in his work

(Ashmos, 2000). The effect is the opposite of desperation and helplessness. In addition, effect is different from control locus, effect is associated with job content and accepts influence from it. Internal locus of control is a personality trait which is fixed in various modes (McMahon, 2006).

### 2.8 Partnership with others feeling

This word can manifest itself with being involved in administration which includes attending meetings, sharing their beliefs with others and awareness of current issues. So that everyone in the organization feels that cannot do anything without consulting with colleagues and people who have high power ratings (Ganji, 2010).

## 3. Research Methodology

This research in terms of methodology used can be considered an applied research in terms of target. Because its purpose is to develop a functional knowledge in the organizations. In this study statistical population included 420 experts of the Agricultural Bank with bachelor's degree or higher in the central branch of Agricultural Bank in Tehran.

In this study, for sampling, simple random sampling method is used. Since in the present study the statistical population is identified and the measure of data are qualitative, Cochran's formula used for determining the sample size. The sample size was calculated 215 persons. Also in the present research questionnaire method was used to collect data. For the present study questionnaires to assess psychological empowerment, Spritzer questionnaire (1995) is used and to examine the leadership styles, Multifactor Leadership Questionnaire (MLQ from 5x) used. This questionnaire by Bass and Avolio has been made and developed. Also in order to innovative behavior counter is used.

## 4. Research findings

### 4.1 The first hypothesis testing

There is a significant relationship between transformational leadership styles with dimensions of psychological empowerment (Meaningful, Self Determination being, Efficiency, Eligibility).

By observing the results in Table 1 it is clear that, in this study there is a significant relationship between transformational leadership with all aspects of psychological empowerment of staff. The significant relationship between transformational leadership style and dimensions of psychological empowerment is confirmed. There is a significant relationship between transformational leadership style and meaningful of jobs in the 99% confidence level  $r^2 = 0.33$  and  $P < 0.01$  and between transformational leadership styles with dimensions of psychological empowerment (Meaningful, Self Determination being, Efficiency, Eligibility) a significant relationship in confidence level of 95% was observed  $P < 0.05$ . Also among psychological empowerment aspects, eligibility  $r^2 = 0.61$  has the most and Self Determination  $r^2 = 0.28$  has the lowest correlation with transformational leadership style.

Table 1: correlation coefficient of leadership styles and psychological empowerment

Transactional leadership		Transformational Leadership		Variables
Significany	correlation coefficient	Significany	correlation coefficient	
000/0	0/56**	0/031	0/45**	Psychological Empowerment
001/0	0/42**	0/002	0/33**	Job meaningfulness
0/003	0/60**	0/022	0/61*	Eligibility
0/001	0/34**	0/015	0/38*	Efficiency
0/004	0/36**	0/031	0/28*	Self Determination

#### 4.2 The second hypothesis test

There is a significant relationship between transactional leadership styles with dimensions of psychological empowerment (Meaningful, Self Determination being, Efficiency, Eligibility).

By observing the results in Table 1 it is clear that, in this study there is a significant relationship between transactional leadership with all aspects of psychological empowerment of staff in the 99% confidence level  $r^2=0.56$  and  $P<0.01$  and the significant relationship between transactional leadership style and dimensions of psychological empowerment is confirmed.

As the table results show the relationship between transactional leadership style and job meaningfulness ( $r^2=0.42$ ,  $P<0.01$ , Eligibility,  $r^2=0.60^*$ ) and Efficiency ( $r^2=0.34^*$ ,  $P<0.01$ , Self Determination,  $r^2=0.36^*$ ) is significant.

#### 5 Conclusion

In assumptions evaluation there is a significant relationship between transformational leadership with all aspects of psychological empowerment of staff and there is a significant relationship between transformational leadership style and significance of job.

A significant relationship between transformational leadership styles with dimensions of psychological empowerment (Meaningful, Self Determination being, Efficiency, Eligibility) was observed. Also among the dimensions of psychological empowerment.

Eligibility has the most and Self-determination has the lowest correlation with transformational leadership style. There is a significant relationship between transactional leadership styles with all aspects of psychological empowerment of staff. The relationship between transactional leadership style and significance, suitability, effectiveness and self-determination is significant. In the first main hypothesis of this study, it was found that there is a significant relationship between transformational leadership with all aspects of psychological empowerment of staff. Therefore, it is suggested to the managers and the leaders of the studied organization to use transformational leadership style in the order to promote empowerment of their employees, especially to improve their job meaningfulness. In the second main hypothesis specified that there is a significant relationship between transactional leadership style with all aspects of psychological empowerment of staff and a significant relationship was obtained between transactional leadership style and job meaningfulness, competency, efficiency and self-determination. In addition, by creating a stronger sense of empowerment, leaders can have a

more positive effect on levels of innovative behavior in the relevant organization; To promote greater sense of empowerment among the staff of the Agricultural Bank, top management of the organization must be clearly express their organization vision so that employees assume more responsibility for their work at all levels of the organization; Transparency and targeting more specified tasks and roles may facilitate the sense of empowerment among employees. Also, understand the needs of employees, creating an atmosphere of support and perform confidence making methods of possibility in the psychological sense of more empowerment, will be involved.

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#### Primary Paper Section: A

#### Secondary Paper Section: AE

## THE LEGISLATIVE- JUDICIAL APPROACH BASED ON TOLERANCE IN RESPONSE TO JUVENILE CRIMES IN IRANIAN CRIMINAL JUSTICE SYSTEM

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Following to approval of Islamic Punishment Act (2013), attitude of Iranian legislator was oriented toward accepting tolerance for juvenile delinquents and this approach has been accepted and also systematized with respect to different age groups and separation of types of responses in terms of tolerance level from zero to perfect tolerance. Legislator's response will be also different according to type of crime and age of perpetrator. In discretionary crimes, security and probative measures and mitigated punishments are enforced to this class of persons according to age of perpetrator (ages 9-15 and older in the ages 15-18). Regarding crimes deserving to punishment and retaliation, these generally unchangeable punishments such as Islamic punishment and retaliation may be waived under some conditions and judges of courts will issue award based on age of perpetrator in making decisions according to security and probative measures and/ or mitigated punishments based on detention in house of correction and by other alternative punishments such as public services for free and payment of fine in cash. This legal and judicial approach, which can be also interpreted in literature of criminology based on tolerance attitude, has practically caused several challenges particularly in breach of retaliatory punishment. Referring to numerous challenges in this essay, some judicial awards are also analyzed in addition to review and evaluation of legal approach

Keywords: Age of criminal liability, Perfect tolerance, Relative tolerance, Zero tolerance, Legislative- judicial approach, Penal maturity

### 1 Introduction

In order to fight against ever-growing increase of hostility at 1990s, USA has taken zero tolerance penal policy that derived from well-known theory of Broken Windows. This policy was a response to citizens' concern for security of schools, campaign against carriage of weapon and drugs, and antisocial behaviors. This policy is mainly focused on discovery of all and punishing the crimes with sever punishments. In contrast to approach based on lack of tolerance and/ or zero tolerance<sup>1</sup> in criminal laws sometimes delinquents are sentenced in determination of punishment for some tolerances and/ or indulgences such as cases for juvenile delinquents. Therefore, the basic paradigm of zero tolerance policy is that the crime is not created by disorder but crime is generated due to tolerance and indulgence toward small diversions and social impoliteness. If citizens of a community and their authorities ignore mitigated crimes and small mistakes, this may be led to creation of order in the given region and locality so that if it is supposed that locality or group has no owner in opinion of some scholars in order to give response to diversions and misleading. Along with the given tolerance, this attitude which is mainly taken by police and responsible institutes for fighting against disorder, the other type of tolerance may be assumed within responses given to crimes determined by the courts. This type of tolerance about juvenile delinquencies needs to be analyzed per se so that by anticipation of security and probative measures regarding children and adolescents, to what extent the legislator has taken tolerance and approach and how much such tolerance is consistent with juristic attitude of waiving of punishment from children. Accordingly, it is also tried to present analysis within review of range and level responsiveness for children and adolescences conflicting to law in rate of their tolerance to them and criminal liability are integrated in this analysis. Looking at Articles 88-95 of Islamic

Punishment Act (2013), one can draw triple- range relating to level of tolerance: first, *perfect tolerance* denotes lack of criminal liability, second, *relative tolerance* is classified by age so it can be called as tolerance in criminal response or criminal tolerance with respect to medical aspects. Third mode<sup>2</sup> can be also mentioned within framework of *zero tolerance* and with concept of potential for determination of criminal responses which can deserve to enforcement of Islamic punishment and retaliation in such crimes and this is assumed as a principle if some conditions satisfy these principles may be breached while judge of court shall replace alternative punishment with them, that depend on age of person with more mitigated punishments compared to Islamic punishment (*Had*) and retaliation (*Ghêsas*).

### 2 Zero response and perfect tolerance (100%)

The minimum age of criminal liability is considered as zero in 23 countries of the world. In other words, in some countries no minimum age has been anticipated for criminal liability in these countries and children at any age will be punished in the case of perpetration of crime. In some countries have tried to determine minimum age for criminal liability in their reports proposed to UN Committee of Children's Rights based on some of their domestic laws but this committee has concluded in their accurate investigations that there is also potential for enforcement of punitive reactions to children at ages younger than the given ages in rules of these countries and for this reason that age has not been accepted as the minimum age for criminal liability in those nations. For instance, Bahrain is one of these countries. In their report that had been proposed by Bahrain to Committee of Children's Rights this country declared that by virtue of Article 32 of Punishment Act (1976) of this country, the minimum age was 15 years for criminal liability but the committee concluded in their investigations that the given age of 15 years was in fact age of completion of criminal liability and it was the age after which the person possessed full criminal liability. However, there are some cases in laws of this country that has provided potential for enforcement of punitive reactions to children under age of 15 years as well.<sup>3</sup>

In Iranian Criminal Acts according Article 147 of the Islamic Punishment Act (2013), the age of maturity is determined nine and fifteen lunar years respectively for girls and boys.<sup>4</sup> Two different systems have been designated for discretionary punishments (*Tâzir*) and other punishments and the latter one is that the various reactions have been considered according to type of committed crime and age group of perpetrators in the field of discretionary punishments. Two types of crimes deserving to discretionary punishment and *Islamic Punishment (Had)* and *Retaliation (Ghêsas)* and should be distinguished from each other based on tolerance and they should be dealt with in this regard since there is not noteworthy change in liability caused by perpetration of crimes deserving for *blood money (Diyéh)* by children in Islamic Punishment Act (2013).<sup>5</sup>

<sup>1</sup> Theory of zero tolerance (which was proposed by Wilson and Kelling) and theory of broken window are complementary to each other.

*Zero tolerance*

Cunneen, C. (1999) 'Zero tolerance policing: how will it affect indigenous communities?', *Indigenous Law Bulletin* (available online at <http://www.austlii.edu.au/au/cgibin/disp.pl/au/journals/ILB/1999/22.html?query=zero%20or%20tolerance%20or%20policing#fn1>).

Dennis, N. (ed.) (1997) *Zero Tolerance: Policing a Free Society*. London: IEA Health and Welfare Unit.

Muncie, J. (1999) 'Institutionalized intolerance: youth justice and the 1998 Crime and Disorder Act', *Critical Social Policy*, 19: 147-75.

Wilson, J. and Kelling, G. (1982) 'The police and neighborhood safety: broken windows', *Atlantic Monthly*, March: 29-38.

<sup>2</sup> The first step was taken for determination the lowest age of criminal liability in bill for proceeding juvenile crimes in which gradual system of criminal liability of children was anticipated as follows: a) up to age of 9 exempted from criminal liability; b) ages of 9-12 with probative- corrective responses; c) 12-15 years by probative-punitive responses; and d) 15-18 years with mitigated punitive responses (Savadkoohifar, 2009: 252).

<sup>3</sup> Sabooripour, Mehdi, & Fatemeh Alawi Sadr (2015), Age of criminal liability in children and adolescents in Islamic Punishment Act, *Research Journal of criminal law*, 6<sup>th</sup> year, vol. 1.

<sup>4</sup> Fathi, Hojatollah (2009), Criminal liability of children by an approach toward bill of Islamic Punishment Act, *Islamic law*, Vol. 21, pp. 81-104.

<sup>5</sup> It should be noted that by virtue of Clause B of Article 292, like the past time crimes committed by children are assumed as examples of offences of simple faults and the *sponsored relatives* (guardians) should be originally responsible for payment and compensation of blood money to these crimes and also in accordance with articles in fourth chapter of book of *blood monies (Diyéh)* in Islamic Punishment Act (Article 462 and so forth).

In Iranian criminal law, maturity age<sup>6</sup> deserves for retaliation and Islamic punishment as criterion for distinguishing type of punishments. In Article 147 of Islamic Punishment Act, 'age of maturity has been determined total nine and fifteen lunar years in girls and boys respectively.' Based on calculation of Iranian calendar year, every 9 lunar years are the same as 8 years and 9 months and also every 15 lunar years are equivalent to 14 years and 7 months in Iranian calendar year because any lunar year is ten days shorter than one Iranian calendar year (solar year). Although this age of maturity has been deemed as age of criminal liability in Law, it can be found that Holy Quran has addressed both physical growth and spiritual and rational growth regarding subject of maturity so it has not determined specific age for criminal maturity and as age of liability.<sup>7</sup> Similarly, it requires nothing this point about subject of criminal tolerance that according to statement of juristic sources, a child is assumed in career of undiscerning child from birthday to age of seven that considered as phase before age of discernment and majority of Islamic jurists and scholars agree in this period and determination of given age and they argue that during this period child has no penal and criminal liability at this period<sup>8</sup> in whatsoever and s/he may not be punished under title of correction and probation with the specific concept of this term at all and *undiscerning child* lacks competency similar to insane in this period and it has been implied the minority (infancy) is one of consequents and it is not required for human nature while minority is opposed to competency and if a minor perpetrator commits crimes s/he does not deserve to be subject to enforcement of Islamic or discretionary punishments. Of course, s/he is liable for his/her properties in terms of civil case if s/he causes loss to someone else. Thus, although legislator has mentioned absolute order for this age in Provision 2 of Article 88 of Islamic Punishment Act and it covers any age under age of maturity, it seems that one can consider a minimum age to assume relative liability as total 7 years by taking examples from juristic guidelines and the period under this age to be included in total and perfect tolerance.

By virtue of Articles 88 and 89 of the aforesaid law, the criterion of maturity age is determined according to age in Iranian calendar year (solar year) for crimes deserving for discretionary punishment in which if the perpetrator of a crime is at age of total 18 years (solar years) s/he will be treated as an adult in trial and punishment while at lower ages than 18, type of response depends on this point if his/ her age is 9-12 years, 12-15 years, and/ or older than 15 years before completion of age 18 and also type of response will vary in terms of intensity of discretionary crime.

As a result, if perpetrator of crime is at age lower than total 9 solar years upon commitment of crime deserving for discretionary punishment, no decision may be made regarding him/ her and legislator has determined total 9 solar years as the minimum age needed for response to discretionary crimes. Such an approach toward discretionary crimes (Tāzir) is considered as a type of absolute tolerance and kind of zero response while if the same person<sup>9</sup> is at age lower than maturity age (15 lunar years for males and 9 lunar years in females) and deserves for Islamic punishment of a crime one can take certain probative measures for him/ her so this will be discussed in the following.

### 3 Relative tolerance with medical measures

With respect to the same criteria to distinguish age of liability based on type of crimes and dual approach taken by legislator regarding discretionary crimes (Tāzir) on the one hand and the

crimes deserving to Islamic punishment (*Had*) and retaliation (*Ghēsas*) on the other hand, relative tolerance can be also distinguished according to type of committed crime.

#### 3.1 Crimes deserving for Islamic punishment and retaliation (*Had*) and (*Ghēsas*)

With respect to Provision 2 of Article 88 of Islamic Punishment Act, this relative tolerance may be classified with age levels of immature persons with ages lower than 12 years and also immature ones at ages 12-15 lunar years because by virtue of this provision, 'if an immature person commits one of crimes deserving to Islamic punishment and retaliation and s/he is at ages twelve to fifteen lunar years, s/he will be sentenced to one of the measures stipulated in Clauses (D) and/ or (E) otherwise one of the specified measured will be taken against given person listed in Clauses (A) to (C).'

**3.1.1 Immature younger than 12 years:** The main regulations of the governing legal system over perpetration of crimes deserving for *Islamic punishment (Had) and Retaliation (Ghēsas)* committed by person under age of 18 have been mentioned in Provision 2 of Article 88 and Article 91 of Islamic Punishment Act (2013). Provision 2 of Article 88 of Islamic Punishment Act (2013) held that if an immature person who is at age group (12-15 lunar years) commits crime deserving to Islamic punishment or retaliation, s/he will be sentenced to enforcement of one of the aforesaid measures in Clauses (D) or (E) of Article 88 (i.e. respectively warning and notice or taking written pledge to not to repeat the given crime and attachment in house of correction for 2-5 years). If immature perpetrator of these crimes is at age lower than 12 years, s/he will be sentenced to one of the measures listed in Clauses (A) to (C) of Article 88 (with corrective, probative, and attentive nature) according to the following part of this provision.<sup>10</sup>

Primarily, unlike discretionary punishments regarding age group under 9 years for which no reaction has been anticipated as potential for enforcement, at least theoretically there is this possibility about crimes deserving for Islamic punishment and retaliation that the judge may take one of the reactions to them listed in Clauses (A) and (C) of Article 88. This impression is derived from the contents of Provision 2 of Article 88. It is noted that the first part of this provision holds that if immature perpetrator of a crime deserving for Islamic punishment or retaliation is at age of 12-15 years, s/he will be sentenced to the listed responses in Clauses (D) and (E) unless otherwise the given reactions in Clauses (A) to (C) will be enforced. Here term '*otherwise*' refers to an assumption that immature perpetrator of crime is under age of 12 given any minimum age has been designated for this type of reactions. As a result, if a child committed discretionary crime under age of nine, s/he will never be subject to reaction by criminal justice system and even no corrective and attentive measures have been also anticipated for this child. However, in the case of perpetration of crimes deserving for Islamic punishment or retaliation by this child, it is possible to enforce the given corrective and attentive reactions for him/ her listed in Clauses (A) to (C) of Article 88.

**3.1.2 Immature at age (12-15):** The first part of this provision is exclusively enforced for boys because the given subject is immature at ages (12-15 years). Whereas according to Article 147 of this act, a girl at age older than 9 is assumed as mature therefore immature at age (12-15 years) listed in this provision is exclusively immature male, as a result, there is some difference among girls and boys in this regard: the girl at age older than total 9 lunar years will be sentenced to Islamic punishment or retaliation if she has committed crime deserving for Islamic punishment or retaliation as the case requires and provided ascertainment of the stipulated conditions in Article 91 but as long as a boy is under age total 15 lunar years he will be sentenced to one of the given attentive and punitive measures and reaction in Article 88 instead of Islamic punishment or

<sup>6</sup> Nobahar, Rahim (2012), Age and criminal liability: Revision of well-known theory of Shiite jurists, Research Journal of criminal law, vol. 6

<sup>7</sup> To confirm this comment, see also Mir Mohammad Sadeghi, Hossein, Crimes against properties and ownership, Mizan Pub, thirty fifth Ed., autumn 2013, pp. 271-272.

<sup>8</sup> It is because of the fact that the Islamic jurists have only designate this age for children older than 7 years based on some narratives about discretionary punishment. For example, see also Khoei, Seyed Abolghasem, *Fundamental in completion of book of Menhaj*, translated by Alireza Saeed, vol. 2, p. 114. Quoted from Mir Mohammad Sadeghi, Hossein, Ibid, p 271

<sup>9</sup> Provision of Article 88

<sup>10</sup> - Sabooripour, Mehdi & Fatemeh Alawi Sadr, Op. cit., p 85

retaliation. Thus, the basic defect is in that there is no specific minimum age for the child to determine opposite concept of this article to age before maturity since starting at birth and therefore the immaturity level has not been specified in Islamic punishment and retaliation.

The question that may be raised about Provision 2 of Article 88 of Islamic Punishment Act (2013) is that in comparison with the similar regulations in previous Islamic Punishment Act, if this provision is more favorable in terms of type of response and is it more compatible with scientific objectives of criminal justice for the juveniles? In Islamic Punishment Act (1991), immature boys that committed crime deserving for Islamic punishment or retaliation, were included in general order listed in Article 49 by which they were exempted from punishment and their probation was subject to decision of court for which guardian of children was responsible or duly by house of correction for the juvenile.<sup>11</sup> As a result, court might deliver male adolescent under age fifteen years to his family that committed crime deserving for Islamic punishment or retaliation and/ or send him to house of correction for juveniles for some period. According to Islamic Punishment Act (2013) such a person will be sentenced to sending to house of correction based on discerning of judge and with respect to his age and/ or he will be subject to enforcement of more mitigated reactions such as warning and notice by judge for his case.<sup>12</sup> Consequently and unlike what it seems *prima facie*, Provision 2 of Article 88 has not too changed in criminal reaction to children committed crimes deserving for Islamic punishment or retaliation while former Islamic Punishment Act had approximately anticipated the same reactions to such delinquent children as well.

### 3.2 Crimes deserving to discretionary punishment (Tāzir)

Depending on age of perpetrator of discretionary crime and type of committed discretionary crime, the degree of tolerance by legislator is reduced by increase in age of perpetrator and intensity of committed discretionary crime in Islamic Punishment Act where distinguishing of this process will be discussed in the following.

**3.2.1 Age group (9-12 years):** Article 88 of Islamic Punishment Act (2013) has held that children at ages (9-15) will be subject to one of the listed decisions in Clauses (A) to (E) of this article if they commit discretionary crimes. However whereas according to Provision 1 of this article, the given decisions in Clauses (D) and (E) are only enforceable regarding children and adolescents (12-15 years) thus the applicable measures concerning age group (9-12 years), are exclusively specified to the cases listed in Clauses (A) to (C) in this article.

Substantially, reactions legislator has anticipated for this age group include remedial- probative aspect.<sup>13</sup> Technically, this article denotes that the child at age under 9 may not be subject to any decision made in criminal justice system even probative and attentive decisions. In other words, these children may not be tried criminally and in this regard stance of Islamic Punishment Act (2013) differs from the previous Islamic Punishment Act because according to Article 49 of that act, children were acquitted from criminal liability but according to attitude of the court, their parents were responsible for training of them and duly by house of correction for juveniles. As a result, no

minimum age has been designated in previous law for attendance in criminal court. However in Islamic Punishment Act (2013), no reaction and even correction or probation is anticipated for children under age of 9 years and this means these children may not be criminally tried. Consequently, there is no legal permission for physical punishment of them as well.

**3.2.2 Age group (12- 15 years):** Concerning to age group (12-15), legislator has shown stronger measure and provide this potential that rather than aforesaid probative reactions in previous clause to enforce some probative- punitive measures versus them as well. According to Provision 1 of Article 88, in addition to the given measures in previous clause, child or adolescent at age (12-15 years) may be also included in anticipated measures in Clauses (D) and (E) in this article. Particularly, the given reaction in Clause (E) comprises of detention in house of correction for three month to one year includes strong punitive aspect.

The following part of this provision has increased stronger measure versus this age group and it held that if these children and adolescents commit 1-5<sup>th</sup> order discretionary crime they shall be necessarily sent to house of correction for 3 months to 1 year and the judge may not consider another reaction for them such as delivery of them to competent persons or giving warning and notice and taking pledge for non- repetition of crime.

In Article 88, legislator has employed phrase of 'children and adolescents' at age between 9 and 15 years while only term 'Children' had been used in this article before final approval of this law and in the proposed bill to IRI Parliament. As a result, subject of offered bill in Article 88 was only concerned with boys because a girl at ages between 9 and 15 has passed from the given presumption of maturity in Article 147 and she is no longer assumed as child. However, use of more extensive term of 'children and adolescents' in Article 88 approved in Parliament, this subject includes both of girls and boys. With respect to these issues, a girl who has passed the age of maturity has become fully criminal liable according to well-known comment of Shiite jurists as long as she has not passed total age of 15 years if she commits discretionary crime will be exposed to the mitigated reaction similar to her male cohorts. This important change has removed some part of defect given about the former laws in terms of discrimination between girls and boys in respective of criminal liability.

### 4 Lack of criminal tolerance (zero tolerance) with potential for determination of mitigated criminal responses in discretionary crimes at age group 15-18

After passing age of 15 until reaching to 18 years old, those girls and boys who commit discretionary crimes will be subject to Article 89 of Islamic Punishment Act (2013). It has been held in this article that the offenders at this age group will be sentenced to one of the punishments listed in that article depending on type of crime in which the most severe case of these punishments is to attachment of criminals in house of correction for five years and also the most mitigated one is to pay fine in cash.

This age group i.e. adolescents at age 15-18 years, are those ones who are placed within in limbo resulting from difference in definition of child in domestic laws and international documents. From perspective of international documents, the foremost one of them discussed in present essay is about convention of children's rights based on which child is someone at age under 18. However, in terms of Iranian domestic laws, the highest age at which one can be called as child is full age of 15 lunar years (fourteen solar years and seven months) which are also specified to the male children.

There was no specific regulation for this age group (15-18 years) in former Islamic Punishment Act and these persons possessed full criminal liability. However, Islamic Punishment Act (2013) has anticipated specific sanctions for the age group and made them to obey a system different from the adults (persons older than age 18). Although legislator has not increase explicitly age of criminal liability, he has extended range of his probative and corrective supports by anticipation of gradual system of criminal

<sup>11</sup> Mehra, Nasrin (2006), Iranian criminal rules and regulations versus delinquent juveniles: Present and future, *Specialized Journal of Theology and Law*, vol. 20

<sup>12</sup> It is surprising that legislator gave right of option about adolescent (12-15 years) perpetrator of crime deserving for Islamic punishment or retaliation so that according his discerning he can sentence perpetrator to detention in house of correction or to give warning and notice to him and to take pledge for non- repetition of given crime. However, by virtue of the following part of Provision 1 of Article 88, if this adolescent commits 1-5<sup>th</sup> order discretionary crime, s/he shall be necessarily sent to house of correction and no more mitigated reaction may be assumed for this person. Consequently, fast and firm reaction of legislator versus this age group regarding 1-5<sup>th</sup> order discretionary crimes are higher than Islamic punishment and retaliation. The wise hint of this decision is hidden to the author and it seems that in this regard legislator has tarnished tolerance frameworks and the related systematization.

<sup>13</sup> Article 1 of convention of child's rights: according to this convention, child is assumed as a human under age of 18 unless age of maturity is deemed as smaller in accordance with applicable law concerning child.

liability and developed these supports up to level of inclusion of person under age eighteen who may not be called as child with any inference from jurisprudential sources. Paying attention accurately to method of choosing equivalents of discretionary punishments for the persons between ages 15 and 18 in Article 89 of Islamic Punishment Act (2013) may indicate this fact better. For example, it has been held in Clause- A of Article 89 that an adolescent perpetrator of 1-3<sup>rd</sup> order discretionary crime will be sentenced to attachment in house of correction for two to five years. Consequently, detention in house of correction for 2-5 years has been replaced with 1-3<sup>rd</sup> order discretionary punishments. The least period of discretionary punishment is ten years of confinement for this case and longest period of discretionary imprisonment is life confinement as well. As a result, legislator has replaced attachment in house of correction of age group (12-15) for 2-5 years with confinement for more than 10 years to life confinement so this represents turning around from punishment and punitive- centered approach of legislator and his attention to corrective and probative attitude regarding this age group.

### 5 Lack of tolerance and determination of punishment in crimes deserving for Islamic punishment and retaliation

Based on jurisprudential teachings and legal criteria as children go to age of maturity they will be included in Islamic punishments and retaliation with no enforcement of tolerance. Therefore, it is stipulated originally to focus on zero tolerance concerning such committed crimes at age of maturity unless the conditions take place legislator has anticipated in Article 91. Under this condition, perpetrator will be included in policy of relative tolerance listed according his/ her age. It is referred to details of this article to interpret judicial challenges in the following.

#### 5.1 Age of entry in liability based on nature of response

Maturity of perpetrator is deemed as a condition for inclusion of punishment in crimes deserving for Islamic punishment and retaliation and age of extension of Islamic punishment and retaliation for maturity is full age of 9 lunar years for female and full age of 15 lunar years in males while the condition for extension of these punishments in Article of Islamic Punishment Act is to ascertain some preliminary conditions for criminal liability. Unlike Provision 2 of Article 88, Article 99 of Islamic Punishment Act (2013) has seriously transformed criminal reaction to adolescent perpetrators of crimes deserving for Islamic punishments or retaliation. In this article, three statuses have been introduced as factors to waive Islamic punishment or retaliation and it has required the judge to sentence the perpetrator to one of the given discretionary punishments in this chapter based on his/ her age group instead of Islamic punishment or retaliation. These three statuses are as follows: a) non perception of nature of committed crime by perpetrator; b) non- perception of forbidding nature of committed crime by perpetrator; and c) suspicion in growth or rational perfection of perpetrator where by each of these conditions the given adolescent will be included in status of lack of criminal maturity (growth).

As a result, a girl or boy under age of eighteen that committed crime deserving for Islamic punishment or retaliation and one of above-said conditions is applicable to him/her, will be sentenced to the anticipated punishments in this chapter with respect to his/ her age. Unlike Articles 88 and 89, it has not been identified in this case that if age of 18 is in lunar or solar years. However, with respect to governing spirit over this law, legislator has move toward international documents and considered 18 years as criterion age while it seems 18 years is here refers to solar years (18) since on the one hand judicial approaches in different cases result in confirmation of this age and at the same time more development of this age based on accepting solar years than in lunar years is assumed as interpretation in favor of adolescent. Moreover, task of counting level of solar age seems to be as a burdensome duty for judges in judicial approach even though

many judges may calculate age of maturity as 9 and 15 solar years and ignore a few months as difference.

In addition, two points should be noticeable regarding this article: firstly are those considerations which caused waiver of Islamic punishment or retaliation so strong and credible to cause annulment of discretionary punishment stipulated in Article 89 as well? For example, if a person under age eighteen may not be sentenced to *Islamic punishment* (Had) because of suspicion in perfection of his/ her rationality so that is it logical to sentence that person to discretionary punishment (Tazir)? On the other hand, was not Islamic punishment stipulated only for that person while now it has been waived because of exiting suspicion so that based on which logic this punishment has been replaced with discretionary punishment? Basically, is it possible to sentence someone there is suspicion for perfection of his/her rationality out of stipulated types of punishment in Article 89 albeit of discretionary one?

Secondly, type of reaction has been left ambiguous in Article 91 and legislator has sufficed to issuance of a general order without confirmation for waiving of Islamic punishment or retaliation (of course, waiver can be inferred from them of this article) in that perpetrator with respect to his/ her age to be sentenced to anticipated punishments in this chapter. Now this question is raised that as legislator refers the case of given punishment in this chapter at Article 91, which of these three<sup>14</sup> types of measure he has taken into consideration. Two comments may be proposed concerning to these two comments: First is that it depends on this point the perpetrator of crime deserving for Islamic punishment or retaliation is at what age so one type of above-said measures will be applicable to him/ her. Namely, if perpetrator is at age group (9-12 years), the reactions listed in Clauses A to C in Article 88 are applicable and if s/he is at age group (12-15 years), the reactions existing in Clauses D to E of Article 88 are made, and if s/he is at age group (15-18 years), the measures as subjects of Article 89 from Islamic Punishment Act will be enforced to him/ her. Legislator's emphasis in Article 91 about this point that reaction should be proportional to age perpetrator may seem reasonable in this regard. However, according to another attitude, defect of this statement is in that the legislator explicitly explains about punishment of perpetrator in Article 91 while this legislator has deliberative and knowingly avoided from use of term 'punishment' regarding given reactions in Article 88 and employed term 'decisions' about them. Therefore, as a conclusion it can be commented that if the stipulated conditions in Article 91 do not satisfy, the given person will be sentenced based on his/ her age to each of asserted cases in Articles 88 and/ or 89. Thus, this ambiguity of about term of 'punishment' can be answered in this way that according his opinion at time of perpetration of behavior deserving for Islamic punishment or retaliation what is enforced is the punishment and this punishment covers decisions stipulated for adolescent (9-15 years) and punishment held for them at age (15-18 years) per se accordingly and for them. In other words, legislator has intended to show his ambiguity and also difficulty in avoidance from emphasis in punishment as Islamic punishment and retaliation.

#### 5.2 Penal - judicial policy based on new approach of legislator in determination or waiving Islamic punishment and retaliation

Concerning determination of punishments based on Islamic punishments and retaliation in mature persons under age of 18 solar years, legislator has anticipated some conditions for stipulation of criminal liability to these persons. At this part of

<sup>14</sup> Three classes of reactions have been designated for juvenile perpetrators of crime in this chapter: first includes children and adolescents at ages (9-12 years) as perpetrators of discretionary crimes that are exposed to the reactions given in Clauses A to C in Article 88. Secondly, those children and adolescents at age of (12-15) that committed discretionary crimes or ones deserving for Islamic punishment or retaliation that encountered given reactions in Clauses D and E in Article 88. Thirdly, the group of adolescents at ages of (15-18) that committed discretionary crimes that are exposed to the listed punishments in Article 89 and these punishments have been also classified according to degree of committed crime.

given conditions which are discussed under title of basics of criminal liability for crimes deserving to Islamic punishment and retaliation in order to identify for which conditions the adolescent perpetrator may be qualified for punishments and how one can determine and enforce criminal liability to the juvenile perpetrator caused by committing crimes that deserved for Islamic punishment and retaliation. It is crucially important to interpret judicial- penal policy in this regard because juvenile courts are practically exposed to many challenges in relation to enforcement of Article 91 of Islamic Punishment Act.

Before detailed interpretation of these topics in the following, it should be noted that legislator has referred to condition for inclusion of deserving for Islamic punishment in Article 217. By virtue of this article, 'in crimes for which Islamic punishments are applicable, perpetrator will be liable if rather than knowledge and intention for crime, has known the conditions for criminal liability toward legal prohibition of the committed practice as well.<sup>15</sup>' Maturity of perpetrator is one of the conditions of criminal liability in crime deserving for Islamic punishment; therefore, according to this article if the person is mature s/he is liable if s/he has committed a crime both knowingly and deliberately and despite of knowing legal prohibition of the aforesaid offence. Accordingly, presentation of full criminal liability for this person requires primary ascertainment for recognition of individual liability in which these basic conditions have been predicted both for crime deserving to retaliation and one deserving for retaliation in Article 91.

Here, rational growth means criminal maturity that to reach to the age given person possesses faculty of full recognition and discerning of goodness and evil of actions and perceiving legal and legitimate commands and prohibitions. It can be implied in criminal rules of our country that it has been for the first time this issue has been addressed in Article 91 of Islamic Punishment Act and mainly this subject has been discussed in juristic and legal books typically as 'civil maturity' i.e. faculty of recognition of benefit and loss and wisdom for sustenance and addressed by lawyers and jurists. Following to approval of Islamic Punishment Act 2013 and enforcement of this law regarding Islamic punishments and retaliation for persons under age 18 this subject was one of the equivocal topics in judicial field during recent years although it is stipulated perfection of rational growth for the children after reaching to age of religious maturity, by virtue of given article if there is suspicion about rational perfection and growth of persons under age 18, Islamic punishments and relation will not be enforced to them. Similarly, based on this law, discretionary punishments differ for person under age 18 compared to ones older than age 18. Likewise, the subjects under age 18 have not been sentenced to imprisonment and they are transferred to probative centers such as house of correction.

## 6 Discussion and conclusion

In Islamic Punishment Act 2013, in crimes deserving for discretionary punishment (Tāzir) as well as Islamic punishment and retaliation ((*Had*) and (*Ghēsas*)) committed by children and adolescents, level of tolerance varies separately in recognition of liability and responsiveness. If crime is of discretionary type, tolerance is either perfect and full or relative tolerance. In Full and perfect tolerance, as a person is under age 9 when committing a crime according to legislator's statement and practical procedure of courts, no measure can be taken versus the perpetrator in such a way that basically court may not enter into the justice cycle. Relative tolerance also begins when a person is at age 9 years (in solar calendar) and it is continued before the

end of full age of 18 solar years and by virtue of Article 89, security measures are taken for the given subject at age (9-15 years) and responses given to that subject based on mitigated punishments after age 15 and before the end of age 18 totally whether the perpetrator is male and/or female.

Similarly, tolerance is capable in crimes deserving for Islamic punishments and retaliation or in the case of relative tolerance and/ or zero tolerance and the legislator has anticipated solution to escape from zero tolerance for punishment in Article 91 of Islamic Punishment Act in such a way that 'regarding crimes deserving for Islamic punishment and retaliation, if essence of crime has been committed by persons under age 18 and/ or they do not perceive prohibition of that crime and/ or there is suspicion about growth and full wisdom in them as it requires and with respect to their age they are sentenced to the punishments anticipated in this chapter<sup>16</sup>.' Thus, there is still potential for enforcement of retaliation on persons under age 18 in Islamic Punishment Act and given that Iran has signed international convention of children's rights on 05/09/1991 and it has been ratified by IRI Parliament on 20/02/1992 and according to Article 37 of this convention, it is forbidden to enforce death punishments long- term imprisonments and life confinement without potential for freedom for children under age 18, it seems this process is defective especially it is inferred from body of Article 91 that it principally based on presence of faculty of perception and discerning while the reverse fact should be proved; namely, adolescent should be responsible for proving this cause. Thus, in this regard as level of tolerance approaches to zero, it may deal irrecoverable blow to the adolescent. Nonetheless, number of execution awards is practically very few in terms of retaliation and forensic center usually issue award in favor of adolescents and assumes them as qualified for terms of suspicion and lack of penal maturity and consequently makes them exempted from Islamic punishment or retaliation.

The other point that is duly implied concerning tolerance is the orientation of tolerance. At present, it is not obvious in judicial approach that if the judge intends to sentence perpetrator to the given discretionary crimes in Article 89 after waiver of Islamic punishment and retaliation, which discretionary punishment should be assumed as criteria by him. Has the judge absolute freedom of action and can he enforce each of discretionary punishments as he likes? It does not seem the positive answer to this question can put forth a favorable solution for us because under this condition, a lot of disorder will take place in judicial procedure. On the other hand, how can one accept the legislator to determine exactly type of criminal reaction to the children in discretionary punishments as it already mentioned while such a freedom of action is given to the judge in Islamic punishment and retaliation? These are some ambiguous cases derived from Article 91 of Islamic Punishment Act and legislator has issued general award of Article 91 regardless of them. In fact, legislator's focus on justification of implicit tolerance of Islamic punishment or retaliation in this article has caused the judge to fail in paying due attention adequately to the punishment that will be replaced with Islamic punishment or retaliation and he could not anticipate proper order for the substituted assumption. The relevant challenges of criminal-judicial policy to non-issuance of retaliation award are much numerous. Noting that right of retaliation has been deemed as public right and retaliation right has been assumed for owner of retaliation right from the very beginning while by legislation of Article 91 about adolescents, legislator has anticipated some conditions that has led judicial approach toward waiver of retaliation punishment. Looking at judicial approach, one can found that many judges will encounter a lot of problems if they do not issue decision for retaliation including protests of owners and avengers of blood. For this reason either the judges surrender to view of owners of blood and declare typically ascertainment of conditions for enforcement of retaliation award or by unequivocal acceptance of comment of forensics regarding lack of rational maturity of

<sup>15</sup> Then Article 218 holds that in crimes deserving for Islamic punishment, if culprit claims for lack of knowledge or intention or presence of one barriers of criminal liability upon perpetration of crime, provided the truth of his/ her statement is possible and if s/he claims that s/he has committed crime by threat and intimidation or torture by confession then the given claim will be accepted without need to evidence and oath.

N. B.1: Regarding crimes such fighting against God and corruption on earth and crimes causes indecency by force, duress, abduction or beguilement, only claim may not waive enforcement of punishment and court shall investigate about reality of case.

<sup>16</sup> This article has been enacted according to fatwas from Ayatollahs Noori Hamedani and Makarem Shirazi.

perpetrator they cancel retaliation and overlook such protests. Procedure of National Supreme Court has been formed accordingly to refuse awards of execution. The problem is not only limited to this point in judicial approach about retaliation punishment since judicial precedent encounters problem to determine which type of punishment and at what level should be stipulated instead of retaliation. Retaliation punishment is placed at one side and under the most aggregated condition there is attachment in house of correction by virtue of Article 89 on the other side. Looking at this condition here, one can find judicial challenges against enforcement of legislator's approach in taking appropriate reaction by the judge because it has not been yet accepted customarily to imprison someone instead of retaliation order. Accordingly, here it necessitates duly preparation of the needed platform with culture-building to adjust penal- judicial policy to modern approach of legislator. On the other hand, it is declared by norm that detention of a person may not meet his/her right. Moreover, the subject may demand for insolvency to pay blood money and at last the owner of blood do not benefit from blood money at all. According to attitude of some judges even under such a condition, if retaliation was a right for the government and not right of owners of blood, the practical problem was reduced more and execution punishment in drug abuse related crimes may confirm their given idea.

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#### Summary of Primary Paper Sections: A

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## VALUE RELEVANCE OF CORPORATE SOCIAL RESPONSIBILITY (COMPANIES LISTED IN TEHRAN STOCK EXCHANGE)

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**Abstract:** Both book value and market value of a profit organization belong to a single figure (for profit entity) so reasonably they must be close to each other. This failure may be due to conservative accounting methods and structural problems such as historical cost principle, matching principle, unit of measure assumption etc. In recent years with increasing societal expectations of organizations, legislative bodies, customers, social institutions and governments have paid special attention to the matter of corporate social responsibility (CSR). Accordingly, 68 companies listed on the stock exchange in 2014 were investigated. Data processing using cross sectional regression model for the 68 sample companies stipulated the absence of information content resulted from disclosure of social responsibility.

**Keywords:** information content, social responsibility, social performance, relevance

### 1 Introduction

With the creation of large corporations and their undeniable impact on human life as well as reduction of the state role in the economy, building mutual relationships and interactions between companies and communities will be of great challenges faced by global economy. In the meanwhile, companies have paid much more attention to the community to achieve greater reliability and strengthen their economic and trade relations. As society underlies economic and trade activities and all beneficiary groups and those who have a role in business are known as a member of society, corporate social performance is now more influential than it was in the past in company's evaluation and allocation of resources. If companies have poor social performance beneficiaries may restrict corporate access to resources which affects company's social legitimacy. To have a stronger social performance and be able to maintain its social legitimacy, company should allocate resources to social responsibilities (Etemadi and Chalaki, 2005).

If we can inform all stakeholders of how social responsibilities are implemented and their expected results, it can be predicted that all of them will benefit from the profit through a logical interaction and contribute to their success and other beneficiaries through the benefit synergy so it'll lead to enterprise positive performance in appropriate economic conditions of the society.

On the other hand, the main purpose of financial report is to help users especially investors to make economic decisions and company's value assessment is the main basis for this process. Company's market value reflects shareholders wealth and according to balanced scorecard approach, the value of shares is one of the measures of company's performance evaluation so to be able to forecast it is of special importance both for investors and managers.

With regard to economic aspects of information, financial and non financial reporting play a vital role in efficient capital market. Thus, compilers of accounting standards attempt to increase compliance of accounting system information with useful information required by investors. For them, the main objective of accounting is to meet capital market information needs. So assessment of usefulness of accounting information in stock evaluation or relevance of accounting information to the company's value which has attracted many interests in recent research has been proposed as the main model in accounting investigations.

Relevance means that accounting information should have the ability to make a difference in a decision. Usefulness in prediction and evaluation and timeliness are of elements of the relevance feature. Relevant information is the one that can be used in prediction models. These predictions are related to variables interested by investors and creditors such as cash received, future stock price and other variables. Each of these variables can predict a part of total return on invested capital (by investors and creditors). The total return includes dividends received and gains (losses) arising from changes in price. Every day, millions of securities are traded in the stock market. Pricing practices of traded securities is the result of the interplay of several variables each of which affect security prices in a different way and with varying intensity. So one of the most important issues to explore patterns and rules governing the market system is how the securities are priced. What factor or factors in the stock market determines the price of a share? Whether the price of a share is determined on the basis of a regular pattern or not?

Hence, if accounting information can be inserted in prediction models related to variables such as received cash, stock price, companies' market value and other variables associated with the return as input, then the hypothesis of accounting information relevance can be accepted.

According to the accounting information, company's value is specified based on its financial situation and activities. But whether disclosure of other important non financial information such as social responsibility has information content or not. Therefore this study examines information content of social responsibility.

### 2 Theoretical framework

Nowadays, operational scope of companies has a much wider range than in the past with the addition of issues such as environment, human rights, labor standards and anti-corruption principles. However, the relationship between financial performance and social performance is not clear. Basically, there are two factors to explain the positive relationship between financial returns and social performance. The first factor that increases profit stems from the overall increase in productivity and the second factor refers to increase in profitability by improving the company's image in the community, increasing social capital and company's stability. Although possible negative relationship between financial performance and social performance cannot be rejected. Because making positive financial returns for stakeholders in short run would be contrary to corporate social obligations and that implementation of social responsibilities entails some cost of the company (Foroughi and Mazaheri, 2009).

There are four theories in the financial literature on the necessity of social performance: the theory of political economy, legitimacy theory, stakeholders theory and theory of support from investors (bonding theory).

According to Gary and his colleague's viewpoint, theory of political economy is defined as the economic, political and social framework of human's life and these dimensions are inseparable. In terms of classic political economy, as long as disclosure of social information is optional all information required for the society won't be issued thus company's legitimacy will be met. This theory considers the government as the one body that protects the powerless group's interests which is responsible for maintaining the legitimacy of social system by mandatory disclosure. In other words, government could endorse social reporting by legal requirements (Foroughi, 2008). This theory is largely consistent with the concept of economic embeddedness posed by Karl Polanyi. An embedded economy is a system in which economic relations of the society are formed influenced

by non economic institutions and the economic context is defined integrated with cultural, political and social grounds. On the contrary, there is the disembeddedness concept. A disembedded economy is a system in which economic relations are influenced by institutions that have been established with economic incentives. In fact, in such system the economy is detached from social contexts and has independent rules and laws. In this terms, social reporting of enterprise is an integral part of company's activities (Al-Hares et al. 2012).

On the other hand, the legitimacy theory claims as long as organization is legitimated by the community will be able to continue its activities. From this perspective, companies take authority of using public and human resources through a social contract with all people. Over this process, however, organization will affect the society and the environment. In case that major social and environmental events occur, it'll be necessary to change reporting procedures to include social values.

The stakeholders theory emphasizes on two ethical (normative) branch on how the beneficiaries must be treated and managerial (positive) branch which represents special beneficiary groups' management. Organization in this theory defines the relationship with the beneficiary group based on its importance. According to this theory, the main way of communicating with stakeholders is by disclosure of social information. Through this path, organization must raise its accountability level from focusing solely on the owners of capital to other stakeholders and society in general. Because as stakeholders and community affect and get affected by organization's operation, then meeting organization's interests depends on a good relationship with stakeholders and creation of a favorable social context for organization's activities (Foroughi, 2008).

Another concept used to justify social reporting is the theory of minority rights protection or bonding theory was proposed by Saghafi and Talaneh (2004) and developed later by Pourheydari and colleagues (2005). Saghafi, defines bonding as a mechanism to protect minority investors and suggests companies to voluntarily adopt a higher level of disclosure and attract minority investors by assuring them. He believes that minority stakeholders may be deterred from investing due to the risk of lack of ownership and tend to reduce their share capital in the company. Minority investors are supported and assured through the legal means or oversight of institutions such as support of underwriters, auditors, credit rating agencies, stock analysts and stock exchange organization. The main idea behind bonding mechanisms is increased protection for investors and thereby reduced representation costs. Pourheydari et al. (2005) stated that there should be a useful bonding and monitoring as costs of loss of ownership for large stakeholders lead them to the exclusion of other investors. They believe that control of company's activities in order to prevent other investors expropriation will result in lower costs of capital because minority shareholders do not want to lose their ownership in the company. Companies' good social performance is the most desirable way that can defend the right of minorities. More social reporting, disclosure and transparency and implementation of corporate governance are some of social functions of the company.

Such theories and about the necessity of fulfilling corporate social performance and discovering their practical results have attracted scientists' attention. There are different opinions about determining the limits of corporate social responsibility and how company should deal with them. Many people believe that the invisible hand of the market guides the firm on how to fulfill its obligations and other liabilities should not be considered for the firm. The main task of the enterprise is to deliver goods and services to the community and increase profits and wealth that will lead to the development of the society. Some advocates of the market economy like Milton Friedman disagree with social responsibility and state that it is in contrast with the mechanism of a free market economy. Friedman believes that reducing product prices to curb inflation, recruitment in order to fight

unemployment and spending a lot of money to decrease environmental pollution are a waste of money and capital of stakeholders which is a result of good-heartedness of some people. According to Friedman, the only social responsibility defined for a business company is to use resources in the society and engage in activities to increase profits in accordance with rules of the game (with no deception).

Others believe that enterprise survival depends on community so it should take responsibility to solve social problems and issues. Carol depicts four economic, legal, ethical and sacrifice responsibilities for firms and believes that disregarding social responsibilities leads to government intervention and reduced performance. In his view, performing social responsibility voluntarily is a way to obtain more profits.

Apart from the last two viewpoints, there are other perspectives such as Peter Drucker's. Drucker takes the moderation route and introduces responsibility fulfillment as the first and main responsibility of each institution and says that if a firm fails to perform its main task well, it won't be able to do any other thing. According to this view, social performance is deemed desirable as long as it helps to maximize shareholders' wealth.

What was discussed above was a summary of the most important ideas of Western thinkers on the issue of corporate social performance. According to the first approach, individual values are the basis of thoughts and achieving economic utility is rooted in performance and among all, America and Britain support and spread this idea. The second approach is seen in non-Anglo-Saxon countries such as China, Japan and Germany in which the economic utility is resulted from social interests and what is of great importance is collective effort and common values (Hand, 1999).

On the other hand, the relevance of a variable with stock value is the explanatory power and ability to predict that variable (accounting data) based on stock value.

The relationship between accounting figures and variables and stock price and the value of company can be addressed from two aspects:

- A) The relevance with company's value
- B) Greater explanatory power of company's value which is obtained by comparing two information resources:

Preliminary research on the prediction of company's value has been conducted using accounting variables of earnings and book value. Given that book value is the final result of accounting system, if accounting measurements are done in such a way that book value and market value are considered to be equal, financial analysts won't need accounting variables such as profit and cash flows. But company's book value is not equal to market value in accounting measurements and that's why stock price provides a good criterion to evaluate the usefulness of accounting numbers.

### 3 Literature

Dechow et al. (2004) examined the relationship between social responsibility and financial performance using data from a five-year period. The results indicated that there was a significant positive relationship between social responsibility and financial performance.

Dastgir and Khodadadi, (2007) investigated the effect of social responsibility on financial and nonfinancial performance. Data related to 150 senior managers of Indian companies was collected through questionnaires. The results show that ownership, company's size, and favorable perception of managers of social responsibility are related to improvement of financial and non financial performance.

Anandarajan et al (2006) examined the relationship between social responsibility, financial and market performance.

According to the results, social responsibility increases company's financial performance but has no significant impact on market performance.

Chen Charles et al (2000) studied the relationship between information asymmetry and corporate social responsibility. The results revealed there is a significant negative relationship between companies' social responsibility and information asymmetry. In fact, findings here indicate that companies with higher level of social responsibility have less information asymmetry.

Midelton (2015) reviewed information content of social responsibility. The results indicated that social performance of Russian companies has information content.

Haziwan (2013) studied the relationship between managerial ownership and various aspects of CSR in the hospital industry. The results revealed a negative relationship with staff dimension and a weak negative relationship with aspects of society, environment and customers.

Arabsalehi et al (2013) examined the relationship between social responsibility and financial performance of companies listed in Tehran stock exchange. The results showed that financial performance is associated with corporate social responsibility towards customers and institutions in the society. However, there was no significant relationship between financial performance and corporate social responsibility towards employees and environment. This research will help managers develop effective policies on corporate social responsibility which are required to achieve better financial performance in the long run. It also provides companies with an insight on the role of social responsibility in earning benefits in the future.

Hassas Yegane and Barzegar (2013) reviewed the status of corporate social responsibility and the history of its concepts and definitions. In this study, the status of corporate social responsibility in Iranian business environment was considered and the importance of developing standards, regulations and legislative bodies measures to oblige companies to pay special attention to social responsibility in terms of accountability and transparency according to the attitudes of stakeholders.

#### 4 Research hypotheses

This study aims to analyze the relationship between social responsibility and company's market value. In order to achieve this objective and considering the literature and theoretical framework discussed above, research hypothesis is considered as follows:

Three main aspects including, disclosure of corporate social responsibility of environmental aspect, corporate social responsibility of economy aspect, and corporate social responsibility of societal aspect significantly impact on the stock price crash risk of companies listed in Tehran Stock Exchange.

#### 5 Methodology

This study is a quasi-experimental, causal-comparative and descriptive-correlation research based on cross-sectional data which is carried out using multiple regression and econometric models. To collect the literature and theoretical framework, library method is used. Data required was collected through questionnaires and the database of Tadbirpardaz Company. To analyze the data, spss and Eviews software was used. The population consisted of all companies that meet the following provisions:

1. Listed on Tehran Stock Exchange before 2014.
2. The end of their fiscal year is March 29.
3. Not belonging to the financial companies (such as banks, insurance institutions) and investment firms.
4. Companies that have not changed their fiscal year during the period studied and their financial information is available.
5. Companies that have not had any financial losses over the period studied.

Considering the limitations mentioned above, populations was comprised of 136 companies. The entire population was selected to be studied. In the next step, social responsibility questionnaire was sent to the entire population member. In the end, 68 companies completed the questionnaire. The objective of this study was examine the information content of the disclosure of corporate social responsibility in Tehran Stock Exchange so the following regression models are used to test the hypotheses:

$$1) MV_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 E_{it} + \varepsilon_{it}$$

$$2) MV_{it} = \alpha_0 + \alpha_1 BV_{it} + \alpha_2 E_{it} + \alpha_3 CSR_{it} + \varepsilon_{it}$$

Table 1: Variables introduction

Variables symbols	Descriptions
$MV_{it}$	The market value of equity to total assets
$BV_{it}$	The book value of equity to total assets
$E_{it}$	Net income before unusual and extraordinary items of company i during year t to total assets
$CSR$	Corporate social responsibility

By comparing the explanatory power of models 1 and 2, the hypothesis is tested indicating whether added responsibility disclosure to the net income and book value for company value will provide more relevant information or not. (table1)

#### 6 Data analysis

One of the most commonly used methods of measuring the reliability of a questionnaire is Cronbach's alpha coefficient. In this study, Cronbach's alpha obtained was 82%. However, to

determine the reliability, alpha rates of both parts of the questionnaire should be taken into consideration. Our questionnaire is divided into two parts of social responsibility within and outside the organization whose alpha coefficients were respectively 72% and 74% therefore questionnaire has optimum reliability.

Descriptive statistics of the study population in terms of social responsibility are as follows:

Table 2: Descriptive statistics of social responsibility (68 observations)

Title	Number of questions	Score	Mean of each class	Total rating mean
Social responsibility (customers)	476	345	0.72	0.16
Social responsibility (employees)	544	374	0.68	0.17

Social responsibility (environment)	272	182	0.66	0.08
Social responsibility (society)	816	341	0.41	00.16
Total	2108	1242		0.58

As shown in table 2, the average scores obtained from the total points is equal to 58% whose highest and lowest amounts were respectively related to the employees and environment.

Descriptive statistics of other variables are as follows in table 3:

Table 3: Descriptive statistics of variables

Variables	Number of observations	Minimum	Maximum	Median	Mean	Standard deviation
Market value	68	0.032093	16.24201	1.099431	1.407344	1.981731
Book value	68	0.031452	0.921022	0.248178	0.381234	0.295584
Earn	68	-4.294033	0.547820	0.106953	0.042420	0.623587

First, Im, Pesaran and Shin test was used to examine the stationarity of variables. Non stationary variables result in a

spurious regression. In order to identify durability of data in the present study, the Hadri test was used. (table 4)

Table 4: Results of Hadri test

Variables	Probability	Statistics	Stationary status
MV	0/0000	-7.7489	Stationary
BV	0/0000	-5.4195	Stationary
EARN	0/0000	-8.2887	Stationary
CSR	0/0000	-8.9094	Stationary

If a model with cross-sectional data is used, variance heteroscedasticity is investigated as well. To assess the heteroscedasticity, ARCH test is used. The value obtained from

ARCH test show that heteroscedasticity is present on both models. (tables5, 6)

Table 5: Results of the heteroscedasticity for the first model

Description	Statistics	Cross multiplication
Statistics	0.026752	0.027563
Probability	0.8706	0.8681

Table 6: Results of the heteroscedasticity for the second model

Description	Statistics	Cross multiplication
Statistics	0.026552	0.027563
Probability	0.8711	0.8686

The final estimation of models studies are as follows in table 7:

Table 7: Results of the first model

Dependent variable: market value of equity			
Explanatory variable	Cross-sectional data test		
	Coefficient	Statistics t	Probability
Book value	21626/2	15687/6	000/0
Earn	94901/0	377657/1	1691/0
F statistics	87/31	Durbin-Watson test	92/1
Probability	000/0	Adjusted coefficient of determination	39/0

Table 8: Results of the second model

Dependent variable: market value of equity			
Explanatory variable	Cross-sectional data test		
	Coefficient	Statistics t	Probability
Social probability	0.500976	0.981851	0.3266
Book value	0.020549	2.164187	0.0309
Earn	-0.119599	-0.422013	0.6732
F statistics	4.321	Durbin-Watson test	1/92
Probability	0.0000	Adjusted coefficient of determination	0/36

According to table 8, significance of total regression based on F statistics at a confidence level of 99% is confirmed. According to table 4, the amount of t-statistics is equal to 0.98 and the possibility social responsibility is almost 0.32. On the other hand, adjusted coefficient of determination for the second model 0.36 (0.39 in the first model) so it is increased by adding social responsibility.

## 7 Conclusion

One of the main purposes of financial reporting is to provide useful information for decision making. Users of accounting information assess company's profitability and anticipate its future cash flows based on data reported in the financial statements. Then they make a logical connection between profitability and future cash flows to evaluate company's value and make decisions based on these anticipations.

The relevance of a variable with a share value is explanatory and predictive power of the variable (accounting information) on stock value. The relationship between accounting figures and variables and stock prices and the value of company can be addressed from two aspects including A) the relevance with company's value; and B) greater explanatory power of company's value which is obtained by comparing two information resources.

Although the purpose of organizations is to increase efficiency profitability, but now in the information age and competition breakthrough we should respond social expectations properly. In recent years, legislators, customers, social institutions and governments are paying special attention to the issue of social responsibility. Neglecting environmental and social issues and so on can create problems for organizations and jeopardize its measures and mission and thus affect its success.

This study was conducted to evaluate the information content of social responsibility disclosure. The results suggested that social responsibility does not have information content in Iran's stock market. This result corresponds with Midelton's (2015) findings. The reason is that disclosure of social responsibility in Iran is not estimated in an appropriate way and is not available for users.

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## MULTINATIONAL ENTERPRISES – AN INCREASING IMPORTANCE OF STATE OWNED MULTINATIONAL ENTERPRISES IN THE WORLD ECONOMY

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**Abstract:** Our paper focuses on the description of both multinational enterprises (MNE) and the state owned multinational enterprises (SO-MNE) rates of importance within the world economy. The impact of the public administration is felt in both counts. Along Europe it is more intensive in the post-communist countries like in Czech Republic and Slovak Republic and the same in some Arab countries where the SO-MNE are intensive even dominantly operating mostly within the energy industry segments.

**Keywords:** multinational enterprises (MNE), state-owned multinational enterprises (SO-MNE), foreign direct investments (FDI), internationalization

### 1 Multinational enterprises (MNE)

Mudambi (2008) defines MNE as the net of the activities connected through the knowledge and the flow of the products. By Dunning and Lundan (2008) MNE is defined as an international or a transnational enterprise engaging in FDI and owning or controlling the added value activities in several countries. The MNE is characterized by two features: 1. it enters, organizes and coordinates multiple added value activities within the home market; 2. it internalizes at least some cross border markets regarding the intermediate products resulting from these activities. According to Kusluvan (2013) MNE is defined as the company owning more than 10% of the assets and operating in the contracting relations like the managerial contracts, franchising and leasing agreements within more than one country. As per Zvirgde (2013) the selection of the location is of a strategic importance for MNE due to the factors attracting the foreign companies to specific locations and determining the MNE competitiveness from the long-term aspect. According to Baziki and Norbäck (2016) in principle the MNE are the firms characterized by the international advantages like the patents, know-how and the brand name image. These firms are often very big, organizationally established like the companies with limited liability and operating on the stock market. An UNCTAD (2015) paper points out the plan of the MNE to expand their activities in particular through the foreign trade and export within the mid-term horizon. Among the preferred entering of the foreign markets the importance of the cross border fusions and acquisitions is in increase. According to UNCTAD (2016) the larger is the MNE the higher is the complexity of its internal ownership relations. The literature shows various criteria regarding the evaluation of the level or multinational intensity or transnationality of the firm; i.) Number and extent of the foreign subsidiaries or affiliated firms owned or controlled by it; ii.) Number of countries where it owns or by some way controls the value added activities like: the mines, plantations, factories, premises, banks, offices and hotels, iii.) Their global assets rate, income, sales, number of the foreign subsidiaries employees iv.) International level of management and ownership, v.) Scope of the internationalization of the higher added value activities like the research and the development. Inter alia – the criteria of measurement intends to cover the quality or the scope of the foreign production and the foreign subsidiaries contribution to the approach or the direct creation of new knowledge, vi.) Scope and the scheme of the systematic advantages resulting from its processing and its impact on the economic activities network within various countries, vii.) Scope where the responsibility for establishment and operation of the company as well as the decision process considering the financial and marketing matters are transferring to the foreign subsidiaries (Dunning, Lundan, 2008, p.3). In general we may say that the professionals tried either to quantify the value of the foreign firm production (eventually its foreign representation) or to identify the rate of the management relationships, organizational processes, operational strategies and the calculation of the production in the manner showing their international or domestic orientations.

(Dunning, Lundan, 2008, p.765, 766). The UNCTAD (2016) statistics acknowledge a MNEs enormous force within the country economy and its positions and importance within the world economy and its constant expansion. The most of the MNE companies are coming from the countries of mature markets while the most MNE affiliations are located in the developing countries.

Table 1: The world's top 100 non-financial MNEs, ranked by foreign assets, 2015

rank	TNI	Corporation	Home economy	Industry
1	37	Royal Dutch Shell plc	United Kingdom	Mining, quarrying and petroleum
2	64	Toyota Motor Corporation	Japan	Motor Vehicles
3	67	General Electric Co	United States	Industrial and Commercial Machinery
4	19	Total SA	France	Petroleum Refining and Related Industries
5	40	BP plc	United Kingdom	Petroleum Refining and Related Industries
6	59	Exxon Mobil Corporation	United States	Petroleum Refining and Related Industries
7	75	Chevron Corporation	United States	Petroleum Refining and Related Industries
8	61	Volkswagen Group	Germany	Motor Vehicles
9	18	Vodafone Group Plc	United Kingdom	Telecommunications
10	65	Apple Computer Inc.	United States	Computer Equipment

Source: UNCTAD (2016) World invest report 2015, Annex table 24. The world's top 100 non-financial MNEs, ranked by foreign assets, 2015. Preliminary results based on data from the companies' financial reporting; corresponds to the financial year from 1 April 2015 to 31 March 2016. TNI, the Transnationality Index, is calculated as the average of the following three ratios: foreign assets to total assets, foreign sales to total sales and foreign employment to total employment, c) Industry classification for companies follows the United States Standard Industrial Classification as used by the United States Securities and Exchange Commission (SEC), Data refers to 2014, Data in the table are in millions of USD and the number of the employees.

### 1.1 State owned multinational enterprises (SO-MNE)

Jaworek and Kuzel (2015) say that inspite of the fact that the SO-MNE represent the minor part of the total number of MNEs in the world and they have an important portion of foreign subsidiaries and assets regarding their number. According to Kowalsky, Buge, Sztajerowska and Egeland (2013) the fact is that the public sector is long term key economic player within almost all world economies regardless the rate of their development. According to Capobianco and Christiansen (2011) the SO-MNE are achieving a critical position and play an important role as the direct external foreign investors in the time period of two previous decades. UNCTAD (2011) defines the SO-MNE as the enterprises including the parent business firms and its foreign subsidiaries, with the government control interests (full, majority or major minority) if they are not active in the stock market. As the SO-MNE is regarded in particular the state enterprise, public enterprise, public company, governmental business, governmental-trade business or the government owned company. UNCTAD (2014) identified 550 of SO-MNE with foreign assets more than 2 trillions of USD. Sauvart & Strauss (2012) found that the most of the SO-MNE are originally from the country classified within the developing markets. OECD (2009) defines the SO-MNE as the commercial entity established through either central or local government and under official inspection realized by the government. An OECD (2005) definition of the SO-MNE is regarding it as the government

owned or the government controlled entities with a corporate form of the assets generating the volume of their income from the goods and service distributions. A SO-MNE is responsible for cca.5% of the economy of average OECD member country. Predominantly within the countries with ranking on the developing markets this share varies from 10% to 40%. The exact characteristics of the SO-MNE legal statuses are different within the respective countries. Shapiro and Globerman (2009) emphasize the probability of the state ownership on federal government, state government, government departments or the state retirement funds levels. In spite of 20<sup>th</sup> century 80<sup>th</sup> and 90<sup>th</sup> extensive privatization the state remains a considerable owner of the commercial companies within OECD member and non-member countries. In some OECD countries the SO-MNE share up to 20% of GDP, approximately 10% of employment and more than 40% of market capitalization. As to the ownership of the SO-MNE within OECD countries the Czech and Slovak Republics are of a high ranking. The state ownership is concentrated within the strategic sectors like the public services, infrastructure, energetics, traffic and telecommunication. Recently and particularly in USA and UK the state ownership within the bank segment undoubtedly increased as the governments of these countries took over the capital shares of the banks and other financial institutions being in crisis. (Shapiro, Globerman, 2009 p.5). Shapiro and Globerman's study demonstrated a probability to make a dividing line between the SO-MNE in mature markets and the SO-MNE in developing and transforming markets. Particularly it is relating to the fact that only a few SO-MNE within mature countries are capable to compete in the global market. Within the mature markets the problems of administration related to the SO-TNC were solved through the combination of the privatization and establishing the corporations. In spite of existing state ownership there is an increased enforce regarding the effective administration. Additionally the remaining commercial SO-TNC within majority of countries are concentrating in several segments being the subject of some form of FDI regulation. On the other hand the SO-TNC in developing and transition markets offer a more complicated reflection. Often the SO-TNC are the part of specific state strategy connected with the national interests and national competitiveness and mostly within the technology and energy segments. Under such conditions a possible failure of the government related to non-commercial purposes, limited transparency and diminished managerial responsibility represent the relevant risks resulting in specific investments of the firms with the consequence of net costs increase to the host economy (Shapiro, Globerman, 2009 p.28). It is highly presumable that the international operations made by the SO-TNC are increasing however it is less presumable that their motivation changes. Henceforth their motivation includes their technology and source accessibility. (Shapiro, Globerman, 2009 p.29). According to Bremmer (2009; Hong et al., 2014) in new era of so called – guarded globalization – the effect of FDI state ownership will always be predominant within the segments representing the strategic priorities of participating governments.

Table 2: The top 100 non-financial SO-MNEs from developing and transition economies, ranked by foreign assets, 2014

rank	TNI	SO-MNE	Home economy	Industry
1	50	Volkswagen	Germany	Motor vehicles
2	70	Eni	Italy	Petroleum
3	67	Enel	Italy	Utilities (electricity, gas, water)
4	49	EDF	France	Utilities (electricity, gas, water)
5	40	GDF	France	Utilities (electricity, gas, water)
6	62	Deutsche Telekom	Germany	Telecommunications
7	17	CITIC Group	China	Diversified
8	30	Statoil ASA	Norway	Petroleum
9	72	Airbus Group	France	Aircraft
10	42	General Motors	USA	Motor vehicles

Source: UNCTAD (2015) *World invest report 2015*, Annex table 24. *The world's top 100 non-financial SO-MNEs, ranked by foreign assets, 2015. Preliminary results based on data from the*

*companies' financial reporting; corresponds to the financial year from 1 April 2012 to 31 March 2013, TNI, the Transnationality Index, is calculated as the average of the following three ratios: foreign assets to total assets, foreign sales to total sales and foreign employment to total employment. The state is the owner of minimum 10% share or it is the majority owner in the firms.*

## 2 Multinational enterprises – interactions with public administration

On one hand the state strives to invite the investors especially to the regions of low employment with aim to increase the employment and this way to eliminate the negative impact on the respective municipalities or the entire region. Generally the state supports the domestic and international companies through the grants, contributions and various allowances provided that they decide to realize their business activities in the respective municipality or the region. Moreover the state prepares the development programs and the same it should build up the conditions enabling the secure and transparent business activities with sufficient legal and financial safety. The key criteria is also a predictability of politics and the decisions both positive and negative influencing the enterprise within specific region or the business subject. One of the roles of the state is to provide its citizens with an equitable redistribution of the sources. In a large extent the sources are coming especially from the major MNEs paying the taxes, fees and levies on the territory of this state. Accordingly and in principle the more successfully enterprising subjects the more taxes for the state and the more means redistributing in health service and school system etc. On the other hand the customer rights are regulated by the laws of the state. The state enters the interaction on various levels: a) related to the business subject, b) related to the end user, c) related to the self-governing entity where the business subject is active or its activity is in consideration, d) related to the municipality where the business subject is active or its activity is in consideration. The state and the business subject relationships are the most often known regarding the important MNEs in connection with their investments that may be specified as the strategic investments or the investments of the national interest or the investments of the strategic state interest. According to Bartková (2005) in connection with provided investment motivation it was necessary to define a term strategic investment (SI). Since the authorities of the institutions, qualified to determinate on the investment stimulus, more often use this term and it is not defined what is meaning of the term SI. The economists considered to define SI with various parameters. The MNE must resp. they are obliged to respond to the legislative changes. This change is related to not only one subject but to any subject realizing the business within the respective segment. We can see mutual relationships and interactions existing between the business subjects. We may differentiate between the competitive and cooperative relationships especially regarding establishment of various associations or federations uniting the subjects for the purpose of the communication also with the public administration bodies. In case when by its legal rules the state protects the end user over the scope of the necessity (existence of unreasonably long term for submission of the initiative regarding the replacement of the product with a new one – see DOA process, very strict and short terms for the manufacturers and the service partners regarding the repair of the goods with right of return the total paid sum or to replace the defective goods with new one, and so on). These cases represent the mutual interest of the business subjects and the same a need of common and coordinated procedures toward the business subject initiating the changes. We may mention an example of the legal lobbying or the initiation of the discussions with authorized public administration bodies for the purpose of making the compromise. In this sense the business subjects are following their interests and are focusing on the fact that the implementation of new legislation will not impact their business negatively regarding the finance. The task of the state is a relevant explanation of the reasons of the legislative changes however the ideal is that the unions of the employers are from time to time concerned with the legislative changes and making

them a proposal of active cooperation regarding preparation of the changes and a probability to comment it. This way we may avoid the only administrative basis of the decisions on respective changes realized without any knowledge of current issues and without foresight of the consequence toward the business segment or the end users/consumers. The decisions of that type have to be realized by the subject matter experts (SME) in the field and based on consideration and interpretation of the complex situation and the same a necessity or irrelevance of any change. The resolutions should not be made only on political basis even though these may not be absolutely excluded in practice. The relationships among particular business subjects may be understood on various levels: competitive (a standard competitive relation), the level of cooperation in mutual interest (e.g. a cooperation in achieving the legislative regulation or in obtaining some respective requirements or on the level of partners cooperation (manufacturer– retailer, manufacturer – logistics company, manufacturer – marketing agency and so on). The business subjects are forming mutual relations and interactions. These are important among the segments too. Another example from IT sector: None of the existing manufacturer is isolated but he joins various mutual relations with: contractors, subcontractors, service partners, auditing agencies, consulting agencies, logistics, telecommunication partners, marketing, and so on. MNE is forming the network of the relationships and bonding within the local background and the MNE operates within international and even in the global rate depending on the rate of the respective expanding corporation. Any of the business subjects makes its efforts to keep the costs as low as possible or to reduce it systematically. It may be reached by the outsourcing too. A split of the operations is by the company outsourced toward the companies specialized within the respective problems. It is an advancement that on the respective market a specialized company has built its entire infrastructure performing required task, disposes a qualified man power, its reputation is good, holds required certifications and concessions and operates its tasks based on prior specified conditions. Let us see in more detail an example of the end user/consumer legal protection regulation. Here we reach even the level of the European Union that within the scope of all countries and uniformly regulates the way of the protection of the end user - consumer. For instance a two year warranty for the consumer products, right to return a product up to 14 days in case when it was purchased via internet or by the phone order, the right to make a claim and ask for both the remedy up to 30 days or the reimbursement. Any above mentioned institution protects the end user/consumer and gives him the specific rights that may be judicially claimed if the business subject is in default. Through its bodies the state operates like the institution defining the basic rules of the game that have to be respected by any player on the market otherwise he takes the risk of a sanction. The sanction may be understood as the sanction of the state toward the business subject not respecting the rules established by law. In addition the sanction concerning the business subject may represent an efflux of the purchasers who will not purchase their goods or services until the business subject changes its way of activity. On the market the end user/consumer will look for another subject meeting its requirements as much as possible and the price will not be the determining criteria every time. If the end user/consumer is overprotected within particular countries then the conflict may occur. In EU it is for instance Netherlands. The end user/consumer, the private person buying the personal computer is by law entitled to two years warranty. However if after expired warranty period the personal computer goes to break and the end user/consumer requires the repair then the costs of the total repair will not be covered only by himself but the specific part shall be covered by the manufacturer or the distributor or by other business subject where the product was purchased. The sum paid by the end user/consumer and the sum paid by the business subject is calculated according to pattern in law. This is one of the business barriers especially within IT segment and in the segment of the consumer electronics in Netherlands. Both the manufacturer and the distributor must negotiate the procedure of furnishing the warranty and non-warranty repairs with adequate prices. In many cases the consequence is the higher price of the

final product. Regarding the business subject it may result in the fact that in contrary to the direct business better is to do the business through the distributors as this minimizes its risk. This relationship forms an interesting consumer culture as the consumer is ready to pay the higher price of the product however on the other hand the consumer expects that in case of warranty and non-warranty repair his requirement will be executed quickly and without unnecessary delay and he may be sure of the fast and qualitative state authority bodies decisions. Essentially MNE is interested in the correct relationships with the local administration bodies and the local state administration bodies. It is concerning the mutual relations where any party follows out its own interests and the aims. The interests of MNE are including: the probabilities to gain the access to attractive real estate or to the well accessible premises for the purpose of building up a branch establishment; a probability of lucrative access to man power of the respective profile whether we are talking about the graduates of the respective fields of study at both the universities and the high schools or about the unemployed persons registered by the employment agency; the favourable price for work; alternative to work for much lower costs during public holidays; a weak position of the workers councils; the employer reputation offering the some standard conditions to its employees in comparison to competing business; the flexibility in case of need to reduce the number of employees. The interests of the self-governing unit are including: an attractiveness of the business subject whether finance or non-finance origin through its engagement in existing both business and public life of the region; connection to existing infrastructure; the support of the local home consumptions provided that the employees of the company shall spend their earnings within the region and supporting other local business subjects; the business subject engagement in activities within the region; the support of the respective schools graduates being a long term interest of the business subject. The self-governing region as founder of many educational institutions should play an important role in the decisions regarding the fields preferable in graduates' implementation at the labour market. The business subject is an inseparable part of the relations and the interactions within the municipality. The municipality represents also the subject influencing the business subject making its decision regarding its enterprising in specified municipality or not. The municipality remains an important subject regarding the interactions with the public administration bodies even after the business subject is active developing its business activities. Another example may be mentioned regarding the cooperation with the employment agencies, schools and universities in connection with probable sale and hire of the real estate, development of both the municipality and the municipal plan, the accessibility and organization of the public transportation, the support of the municipal activities, the business subject employees volunteer activities etc. Therefore on one hand we see formalized relationships, the taxes, fees, licenses, agreements and on the other hand the informal relationships representing the basis of bilateral cooperation. The informal relationships are including the support of the schools, health care or social institutions, the student grants or direct high school or university grants, municipal culture and sport support etc. We may not forget an important attribute of informal or formal employees association for the purpose of support of various activities or the subjects or the civil corporations. To these we may count also 2% of tax transferred to the specified subject and the volunteer activities in pre-school and school institutions. The mentioned forms the interactions above the formal scope of the municipality and business subject relationship where the business activity for the purpose of generation of the profit represents the primary aim.

### 3 Conclusions

We summarized the MNE and SO MNE theoretical definitions and we dealt with the interactions between MNE and a host economy. Our aim was to describe and to document various aspects and seen it like the respective unit. The MNE problematic was seen by us from the perspective of the state resp. the public administration, from the perspective of the



private sector and finally from the perspective of the citizen as the consumer and user of the goods and the services. We assume that our added value is based on the combination of mentioned perspectives and various interests and needs of the respective involved sectors. Our important tools are the modelling and mind map, the brainstorming and description. We illustrated the MNE reaction to the amendment of the legislation of the specific country and the relationships among the business subjects in economy. An example of the amendment of the legislation is based on Domansky general scheme which was applied in the specified process. Our presumption is that the Domansky scheme of MNE interactions in the host economy may be applied to any MNE, country and process. The common features in the sphere of cooperation may be seen especially in the relationships among MNE business partners, and the same on the side of the conflict where the part of it may be the sanction applied by the state in case of failing to respect the new legislation. Moreover it is the inspection carrying out by the authorized courts in enquiring the citizen/end user claims regarding broken customers rights and the common features we see also within the processes that the MNE must continuously update in the way respecting the legal regulations in force. According to the example of the DOA (defective on arrival) process we may describe that MNE are not only the economic involved companies performing the interactions limited to its traditional partners but they are generating also both the contacts and the relations with the state and the state institutions. And last but not least they have to know how to face and to react to the particularity of various economies and the environments related to all the scale of the processes, procedures, respective problems and this all on the side of the inputs and the same on the side of the outputs. Any problem connected with the MNE interactions is regarded from three aspects: from the perspective of the state and MNE and the end user. The public administration is in the interaction with MNE in the scope of the legislative aiming to support the growth of employment by supporting the international and domestic investments through appropriate and particularly competitive tax system. The public administration should provide a long term and stable both political and economic situations in the range preparing the conditions acceptable for business activity in respective country or region and without negative impact on the business sector. Moreover the important attributes are including the stability of the law system and an enforceability of law from the side of MNE and the same from the side of the citizens or the state. We may not forget that toward the end user the state govern also the relations establishing, changing or revoking the rights or the obligations of the respective subjects (among others the business subject or the citizen like the purchaser of the product or the service). From the MNE aspect is a critical perception of above mentioned factors to which may be added the existing infrastructure, local particularities, accessibility and the costs of man power, existence and relevance of the trade unions. Regarding its expansion the MNE decision is based on a complex line of the indicators resulting in positive or negative resolutions. As the important elements we may see also the probabilities to utilize the tax allowances or the tax exemption; probability to obtain the premises or to gain a lucrative rent of the buildings etc. The same the probabilities of specific grants for the purpose of new jobs if the company undertakes to engage the unemployed person long term claiming for work in the labour process. We may not forget the cooperation with the schools, the trade schools and the universities depending on the business subject requirements. The aim is about to be exercising on the labour market. The school should adopt its profiles to the requirements of the market so that to produce not only the graduates but the persons of the attractive profiles capable to exercise them on the labour market. From the aspect of the citizen or the consumer we understand the problem of the relations in two levels: the relationship between the citizen and the state and then the level of the relationship between the citizen and the MNE. The citizen may claim his rights provided him by the law through the authorized bodies, for instance by the administrative or judicial bodies. In particular it concerns the rights granted by the state which is also the protector and a subject providing the inspection of the observation of the rights and its enforceability. The state is

an authority competent to sanction the subjects violating the rights or the obligations. Let us look at the example of the consumer rights protection. Regarding the product bought through the internet, the end user/consumer is entitled to return the product up to 14 workdays. If the retailer does not satisfy the claim then the end user may turn to the commercial inspection that will require the revision and in case of finding the inaccuracy it will apply the remedy of the matter or shall grant the sanction.

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#### Primary Paper Section: A

#### Secondary Paper Section: AE

## THE SPORTS MARKETING AND SPONSORSHIP – EXAMPLE OF GYŐRI AUDI ETO KC

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**Abstract:** The main goal of the scientific paper is the analysis of sports, specifically of the ever-evolving activities in the field of marketing, as well as sponsorship and strategies regarding them. The scientific paper contains results of research, in which both qualitative and quantitative research methods were applied. For the purposes of qualitative research we had an interview with the club's head of communications. For the purposes of quantitative research, we chose a questionnaire survey, which was presented to the fans.

**Keywords:** sports marketing, sponsorship, marketing communication

### 1 Introduction

We list sports marketing into an extensive database of marketing science. Today in sport, with a growing tendency a developing business life takes place, and millions of funds are rotating in the sports business. [5]

#### 1.1 The sports marketing

The sports marketing is a sales promotion of products with the use of products from the sport or sports results, marketing of sports products, as a marketing of product. The main aim of sports marketing is to try to sell products and services related to the topic of sport with the image of sport. If someone wants to be a successful sports marketing expert, it must be extremely knowledgeable about the sports industry, must also understand it depending on this he/she must be able to apply marketing elements and processes in the context of sport [10]. In this economy, the number of goals, the gains and losses in proportion to the number of kilometers may determine the demand. From another point of view not the proportions are important in a case when a member of a club is a world-famous athlete, we can dispense with the arithmetic values and goodwill will take over this position [2]. We distinguish two trends within the sports marketing. One is the sports marketing and the other is marketing through sport. Under sports marketing we mean the sale of sport and its propagation, we also list here the game marketing of sport events, clubs and athletes. Under sport's marketing we mean a variety of marketing activities of companies that are carried out by different sport events. An excellent way for this can be a sponsorship or a contract made with a star athlete is [6]. Nufer and Buehler as a subfields of sports marketing identified the following: ambush marketing, business to business marketing, ethics, event marketing, hospitality marketing, brand management, market research, market segmentation, merchandising, neuro marketing, rights and commercialization, relationship marketing, social marketing, social media, sponsorship, testimonial and celebrity advertising, ticketing, virtual advertising[8].

The sports marketing also applies the marketing's - mixed elements, but the most important factor is the communication mix especially the PR and advertising. The vast majority of public relations in organizational branding are corporate identity that is corporate identity. This includes organizational design, communication, organizational culture and organization "products, respectively. services. Organizational identity of the sports organizations include the organization's philosophy, organizational design to the brand, organizational communication, organizational culture and product / service [12]. Thanks to advances in today's market promotional activities not only rely on the direct sale, but beside that tries to win latent and potential customers, to develop the artificial of human needs and motivate, promote them. In contrast, public relations activity is inconceivable without feedback, because it is an interactive relationship between the communicator and the addressee [11].

#### 1.2 The sponsorship

The next major income source is also image enhancing in sponsorship process. The sponsorship forms the basis of sports marketing; in fact it means the fusion of marketing, advertising and PR. Its great advantage is that the target audience is targeted by their emotions and habits during their free time activities. Its aim is create a direct association between the sports events / sports organizations and providing support to companies [13]. According to the European Sponsorship Association (ESA), the ICC defines sponsorship as follows: the sponsorship is mutual commercial agreement made between the sponsor and the sponsored person, contractually provides financial and other support from sponsors to be able to connect itself with the sponsored image of its brands or products or to realize indirect benefits for cooperation [1]. It's worth to deal with sponsorship in sports, it brings a huge audience. This is an outstanding opportunity that can help an organization or individual person to become known by their sponsored club, event or with the name of an athlete. The sponsorship is a kind of expression of marketing through sport. One way can be called a kind of image transfers [4]. The sponsorship offers further sale and advertising opportunities for the company through sport and the corporate life interconnection [3]. The sponsorship can be called as communication technology that allows a specific event, televised relations, publications and other purchase or support of other things so that the organization has the opportunity to advertise its brand sign, name and description of it [7]. The sponsorship is a great way for the company's corporate social responsibility (CSR) and is a tool for corporate image development of the positive benefits [9].

#### 2 The results of empirical research

The Győri Audi ETO KC counts today as one of the most prestigious handball club, it has a long history. To carry out primary research we used qualitative and quantitative research. The research carried out in early spring 2016. For qualitative research we have chosen the interview which we made with the clubs communication manager. From the basic quantitative research methods we have chosen the questionnaire survey, which was made among the fans. With the questionnaire survey we informed about marketing communication used by the club, furthermore about the quality of information transfer, sponsorship activities and other activities of the club affecting fans. Before the applying a real questionnaire we used test questionnaire to eliminate possible mistakes. The survey was made online and implemented according to the club's fans association database.

##### 2.1 Results of interview research

The deep interview revealed that the club takes the greatest emphasis on youth education and outstanding sports achievements retention and repetition. Hungary wants to remain Europe's outstanding sports center in the future. With education of players the club serves the teams on the entire territory of Hungary, those players who do not get into the first team of ETO, or into other teams of country's cutting-edge teams might compete for European club teams. The development of growing economic life also had an impact on the club's daily activities, so the emergence and integration of marketing activities into the life of the club was essential. To keep up with society and the business and non-profit sector alike, the following steps were indispensable: media lists, photo documentation, organizing press events, press monitoring, image-enhancing activities, inviting sponsors. These activities will help the club to get on the art of high-level marketing, which can be inferred to achieve modern standards. The club's major supporters are obtained by request; the sponsorship with Audi was such, which is the result of many years hard work of the club. It can be concluded that the company's reputation will be enhanced by supporting a club that

achieves success in sports, because their names are identified with each other. Audi Hungaria has also become supporters of ETO at the time when it proved advantageous for cooperation. It's economically advantageous to be a title sponsor of sports clubs, and other supporters as well, because the club's success in Europe and worldwide can advertise the reputation of companies for consumers. Consequently, consumers purchase intention changes into deed that will affect the company because they merge their name with the popular name of the club and the company from this generates economic revenue. Among the future goals the club collecting sponsors is also present, which can gain further valuable cooperation for both parties. According to the club's president the club's revenues are provided by the main sponsor Audi (17%) beside that TAO support is significant (24%) and government engagement (23%), while most of the expenditures are for personal payments (64%).

## 2.2 Results of questionnaire survey

In the research we investigated the sponsorship and corporate relations of recognition. It may be noted that the sponsorship also has its own marketing, where the clubs are encouraging companies to support marketing related activities.

In case of Audi we can talk about acquaintance arising from sponsorship. It is clear from the research that now fans identify Audi with the club. The interviewed persons firstly connect the name Audi Hungaria Motor kft. with the club. The naming sponsorship significance is clearly visible from results; their reputation to consumers gets first by club's name. According to the survey, at almost all options Audi featured first. From the subjective sponsor knowledge 98.75% of respondents have taken Audi first place.

In another case, the club organizes events with his support. Thus, this event will remain in the media; its news reaches a wide range of consumers. The story of Hajdú cheese is an example for this on the basis of our survey, which supports the club not so long time ago, by jointly organized competitions they left a mark in fans consciousness and because of this they are on the second place on awareness scale. According to survey fans do not know smaller sponsors, - which are not involved with various publicity with the club - they do not know them as good as companies linked with events. Based on all these research results and the following results we can state that sponsorship affects organizational life. This is illustrated in part below.

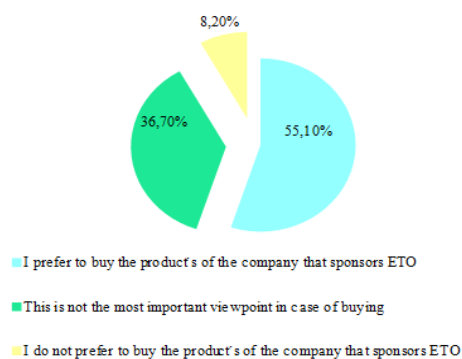


Figure 1: Consumer behavior in the case of two identical products (supporting company's product and neutral company's product)

If a fan needs to choose from two same products (supporting company's product and neutral company's product), then they will choose a product from the company supporting their club, 55.10% in all cases and 36.7% partially. This shows that the connection between the sponsorship and corporate reputation is visible.

The club's marketing activities creates a kind of opinion in fans about the quality of activities. The figure below shows the

opinion of the fans before the stage, during and subsequent promotions, i.e. the clubs complex communication conveyed toward fans.

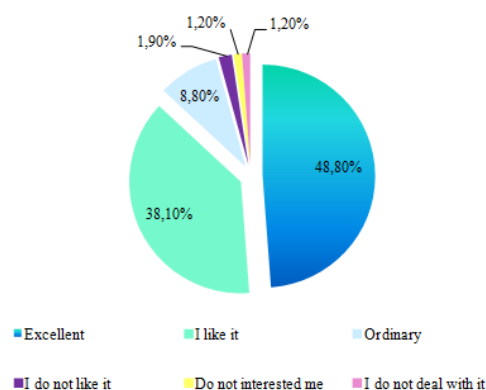


Figure 2: Assessment of the club, the fans point of view of marketing activities

The majority of fans think positively of transmitted communication. According to 48.8% of the respondents marketing activity is outstanding. According to 38.1% of the respondents, marketing communications is eye-catching, but should be improved. Only 13.1% of the respondents had negative experiences related to marketing efforts. The club should seek to reach them as well. For this purpose Győr Audi ETO KC keeps in touch with fans, weekly discussions are made with the head of fans association. Since the club cares for public relations at a high level, they consider it crucial to maintain friendly relations with fans.

Further, respondents evaluated the club's activities on a Likert scale (1 - bad, 5 - excellent). In case of Likert scale we used average and standard deviation.

Table 1 The average and standard deviation of the answers

Answer	Average	standard deviation
Contact with fans	4,04	0,8936
Involvement of fans into the game	3,98	0,8837
Mood creating at matches	4,18	1,1229
Prize games	3,61	1,0006
Information service	3,83	0,9909
Event promotions	3,98	0,9871
Printed information on matches	3,63	1,1812
Activities of sponsoring companies during matches	3,48	1,0664
ETO shop offer	3,68	1,1322

The highest value can be associated with the creation of mood on the match, here is the fans satisfaction the highest (4.18). The fans positively appreciated the contact keeping (4.04), their involvement into the game (3.98), and event advertising (3.98). What they mentioned as shortcomings is a presence of prize games (3.61), the presence of the printed information matches (3.63) and the ETO shop offers (3.68). The club should to take extra care for all components except complex marketing communication and need to raise even the lowest level of satisfaction as high as it's possible. The standard deviation of sample points to the factor of how the pattern data situated around the average. It's characterized by swings at higher value. The higher the value of standard deviation is, the less are answers considered homogeneous. From the standard deviation of answers we can see that respondents not all the time give the same answers.

## 2.3 Analysis of hypothesis

*Hypothesis: There is a relationship between the club's marketing activity and fan's satisfaction.*

To confirm the hypothesis we used cross table, also known as contingency table analysis that indicates the standard deviation of two variables. In this hypothesis, we examined whether there

is a link between the marketing activities of the club and supporters' satisfaction. From the possible statistical analysis we choose Person's Chi-square and Cramer's V.

Table 2 Chi-Square test

Answer	Pearson Chi-Square Value	df	Asymptotic Significance (2-sided)	Cramer's V
Contact with fans	427,701	20	,000	,817
Involvement of fans into the game	392,813	20	,000	,783
Mood creating at matches	353,674	20	,000	,743
Prize games	385,797	20	,000	,776
Information service	354,549	20	,000	,744
Event promotions	374,173	20	,000	,765
Printed information on matches	330,191	20	,000	,718
Activities of sponsoring companies during matches	407,786	20	,000	,798
ETO shop offer	363,329	20	,000	,753

The investigation revealed that there is a relationship between the two variables. Investigated correlations show strong significant relationship in all cases. So the better the club's marketing activities are, the fans are more satisfied and more loyal. It can be noticed that they participate more and more in activities organized by the club, also plays a great role in their daily lives "to belong" to ETO. According to this we accepted the hypothesis.

### 3 Conclusions

The study presented the sports marketing, marketing communications and sponsorship through the empirical literature research and process, as well as the example of chosen sports club through an empirical research. The sport has a huge influence on the world of marketing by its popularity. The relationships between sport and business have bigger significance; millions of funds are carried out by rotating money in each business area of sports activities, so the economic effect is not in question. Within the framework of our research a quantitative survey was carried out between the club's fans, which results were compared by the club's communication manager's interview results. Overall, the aim of the research was to present a well-known sports club's rudimentary and current marketing activities in practice. The Győr Audi ETO KC was not so marketing-oriented before like nowadays. Development progress can be connected to the advancing age. The club's management was forced to use a wide range of marketing tools and involve the business community into operation if they want to contain their success. They nurture their sponsor relationships at a high level, ongoing communications, events, services are associated with sponsors, and in addition they regularly look for new sponsors. From the part of the fans it can be said that they are satisfied with club's activities and with public relations. According to their opinion at some areas they have some gaps. We would propose to examine the reasons for the shortcomings by: market research methods, surveys, invitations for the fans, forums and seek development opportunities. Overall it can be said that for today marketing business has become an integral part of the sport. It is essential to maintain a successful sports organization.

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## COMPLIANCE OF DIFFERENT STANDARDS IN CONSTRUCTION MANAGEMENT AND APPLYING THEM COMPARED TO CONVENTIONAL METHODS IN IRAN

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**Abstract:** Following widespread implementation of large projects with huge budgets and the need to finish them on time; as well as the importance of the final product quality and safety standards in Large-scale projects, the necessity of this field of management was felt more than ever. This study is conducted to investigate and evaluate compliance of various and well-known standards of project management in civil projects. To achieve this, efforts are being made using statistical analysis and multi-criteria decision analysis method (TOPSIS) and expert opinions, to analyze the compliance of these standards in the country's development projects and provide usable solutions to improve the management of these projects. According to the results, it was observed that the PMBOK standard is the best option followed by PRINCE2 and OPM standards, respectively.

**Keywords:** Compliance, Competence of standard, project management, TOPSIS.

### 1 Introduction

Project management is the application of necessary knowledge, skills, tools and techniques to manage the flow of actions in order to meet the needs of the project through the initiation, planning, execution, control and termination processes. Due to the significant development of science and technology in the industrialized world and subsequently production, formation of human needs in the form of various projects, led project managers to utilize new knowledge and skills, fitted the type and nature of the projects, to perform the required activities at good level of quality and the anticipated duration and cost (Scott et al. 2006; Dabbaghet al. 2005; Khojasteh, 2005). Project management, with its modern structure, is formed by emerging two institutions of IPMA and PMI in the middle of twentieth century in the planning and construction of aerospace equipment. Following widespread implementation of large projects with huge budgets and the need to finish them on time as well as the importance of the final product quality and safety standards in large-scale projects, the necessity of this field of management was felt more than ever. As a result, did not last long that the large project-based companies active in the different areas of engineering and most importantly, construction projects, recognized the need to adhere to the principles of project management and have developed different standards in this area. Accordingly, the large project-oriented companies operating in different areas of software engineering, IT, telecommunications, construction and infrastructure development, aerospace equipment manufacturers, creation and modernization of city services and most importantly, civil projects, have found the importance of adherence to recognized principles of project management and different standards were developed in this area (SaberGhochani et al. 2006; Naghavi et al. 2006). Nowadays, different standards in managing different projects including civil projects are reviewing and developing by various countries so that in this way, the new standards are designed. This leads to a lot of efforts to design a global standard in the field of civil project management. However, it should be noted that only producing new standards of project management is not sufficient in detailed and comprehensive management of projects and the important issue in this field, is checking compliance of different standards and how to apply these standards (ZeinAl-Abedin, 2006; Farahani and Mahmoudi, 2007; Behravi, 2007; Bourne, 2009). Many researchers have studied in this field that some of them have been referred in this section. In an article by Dabbagh et al. (2005), entitled "Evaluation and comparison of project management standards of PMBOK and ISO10006", two known standards have been examined and compared given the importance of the use of standards and systematic methods in projects, and in order to utilize the 10006 Standard in projects, diversity and adaptability as well as ISO standard 10006 applied

to the face with it have been discussed while considering PMBOK standard as the basis of comparison. Naghavi et al. (2006), examined the efficiency PMBOK standard for Project Management with Fuzzy modeling, so that can investigate and assess the appropriateness of the exploitation and efficiency of these knowledge and skills, based on the nature or type and complexity of the projects in one of the country's research centers. They concluded that a proper sequence to prioritize activities PMBOK standard are applicable based on the project life cycle and the interaction between project management process groups. Zwerman and Thomas (2000), emphasizing the cultural structuralism PMBOK standard, have stated that specifically, original ideas are naturally transmitted by the communication; Since culture is drawn from a common system of beliefs and values based on a common understanding, a body of knowledge based on culture like PMBOK, can have a significant impact on creating this culture and common language towards integration of project common language. Because by taking it into account, project managers can use this culture as a common language in a multinational team and it has also been the aim of creating PMBOK standard. Fotwe and Caffer (2000), conducted a study on competence development of project management in the construction industry. They have identified the knowledge and skills required to project management in the construction industry. Brill et al. (2006), conducted a study on the competencies and attributes required for effective project management based on Delphi method. They used two analytical methods that one of them included 147 respondents, all with 20 or more than 20 years of project management experience; the result of which was to identify 78 competencies; in the second analysis, they showed that 42 of the 78 competencies are crucial in the successful management of projects. Ahlemann et al. (2009), comparing the results of a case and empirical study of on the use of project management standards in Germany and Switzerland assessed the spread and application of them. Their results showed that, in general, standards have been only rarely used in project management in Germany and Switzerland and the use of standards in these countries is subjected to the adoption of programs implemented in previous projects. Finally, the recommendations are provided to organize standards in order to move forward in the efforts in the mentioned countries. Rifon et al. (2010), used standards and their features to define competency. They used standardized work like ISO and CEN which are the result of formal standardization to identify the competencies, skills and their definitions. Liviu et al. (2010), studied best practices in project management. In their paper, the concept of best practices, the advantages of guidelines for compliance with project management as well as comparing two of the best methods used in project management practices (PMBOK and PCM) and their advantages and disadvantages have been discussed. Antonio and Sanjuan (2013), have examined the use of project management standards and success factors in the development of project management. They base their studies to produce useful and efficient tool to use the standard more optimally and using detailed studies on their selected projects, have examined the conformity of work done with the different guidelines in each project; they used the comparative comparison of well-known standards of PMBOK, IPMA, ICB and PRINCE2 and evaluated application of these standards in their case studies.

Given the importance of systematic use of standards and methods, this study is conducted to assess the compliance of known standards of project management in major civil projects. To reach this goal, we have attempted to evaluate the compliance of different standards such as PMBOK and PRINCE2 in a comprehensive framework and the level of their application and success by introduction of various standards of civil projects management in Iran.

## 2 Theoretical principles of project management standards

Different standards have been developed in the field of project management; the four most commonly used standards in Iran are introduced in the following.

### 2.1 PMBOK 2008 standard

The Project Management body of knowledge manual is a recognized standard for project management profession that provides guidelines for managing individual projects. This standard was compiled in 1976 and its fourth edition was published by PMI in 2008. The best practices of project management practitioners have been also used in developing it. This standard renews the subset of project management body of knowledge as a generally recognized best practice. "Generally recognized" means that the mentioned knowledge and strategies are applicable in most of the projects and most of the time and there is consensus about their value and usefulness. It also provides and promotes a common vocabulary within the profession of project management in order for discussing, writing and implementing the project management concepts (Zokaei, 2008).

### 2.2 PRINCE2 Standard

The "Sympket system" company in 1975 developed the original methodology that was known as PROMOT2. Since the beginning of the introduction of PRINCE2, it is widely used in the private and public sectors and today, it is considered as a known standard in project management in United Kingdom.

### 2.3 OPM3 Standard

The third standard which will be described here is the Organizational Project Management Maturity Model (OPM3). This standard has been developed by the Project Management Institute (PMI). The institute has developed this standard in order for implementing project management principles at the organizational level and it is looking for creating a framework that organizations can assess the level of compliance with their strategic objectives through Project Management Best Practices (Peter and Morris 2007).

### 2.4 ISO-10006 Standard

ISO 10006 manual provides quality management principles and techniques of project management. This document gives guidance on quality issues that affect the project. This guide is applicable in the projects with the different levels of complexity, size and timespan. ISO 10006 manual can be used in projects that conducted by a person or a management team and also to manage several projects simultaneously. The overall objective of ISO 10006 is to create and maintain the quality in the projects using a systematic process.

According to surveys and studies on standards for project management competency, following 8 cases can be considered among the differences between competency standards:

- Applicable in large-scale and complex projects
- using in a variety of projects
- Providing competencies according to the globally accepted definitions
- Matching knowledge competencies
- Matching functional competencies
- reviewed competencies levels
- The number and type of organizations or institutions involved in the implementation of projects
- type of admission
- Evolution in the behavioral competencies

## 3 Research Methodology

In this paper, to understand how to use the checklists in order for achieving project success in implementing the requirements of project management body of knowledge standard, audit checklists were completed by people involved in the project at different organizational levels using a field study that the results are presented in the following. The Percentage of conformity is calculated based on the ratio of responses to total number of questions and the results are included in the charts. Finally, using the audit results, analysis of the gap between company's processes and the processes of project management body of knowledge standard is calculated that can be an appropriate basis for designing comprehensive system of project management. After collecting the data, they have been analyzed using analytical methods. In this study, to determine the test internal reliability, Cronbach's alpha and SPSS software have been used and their reliability has been proven. This method is used for calculating the internal consistency of the measurement tool which measures the different features and each test question will be compared with the other single question. The higher the Cronbach's alpha in a research project, the higher the reliability of the questions. Cronbach's alpha coefficient can be calculated using the following equation:

$$r_{\alpha} = \left( \frac{k}{k-1} \right) \left( 1 - \frac{\sum \sigma_j^2}{\sigma^2} \right) \quad (1)$$

Where  $r_{\alpha}$  is the total reliability of the test, k is the total number of questions of test (sections),  $\sigma_j^2$  is the variance of the Questions scores (section) j and  $\sigma^2$  is the variance of the scores of all questions. Also, if the alpha coefficient is greater than 7.0, it has acceptable level of reliability.

The questionnaire prepared in the previous steps has been presented to a number of experts and professors in order to confirm its content validity. Then, 20 questionnaires have been experimentally presented to subjects and Alpha coefficient was obtained for all questions. The results obtained using Cronbach's alpha for evaluating the questions related to various studied factors are presented in the table below. The overall Cronbach's alpha coefficient for the research variables is 0.78 that indicated the acceptability of the questionnaire reliability. The results of describing the demographic characteristics of respondents including age, work experience have been provided in the following.

Based on data required, from 82 respondents, 14 respondents were between 20 and 30 years, 28 of them were between 30 and 40 years, 21 of them between 40 and 50 years and 19 patients were above 50 years. Percentage of respondents has been referenced in the table above. So the highest frequent is related to the group of 30 to 40 years. As can be seen, the distribution is normal. Also, among 82 respondents, nine patients have less than 5 years of work experience, 36 people have work experience between 5 and 15 years, 22 people have work experience between 15 to 25 years, and 15 of them have over 25 years of work experience. Percentage of respondents in each of groups has been mentioned in the above table. The highest frequency is related to the group with 5 and 15 years of work experience.

## 4. Findings and conclusions

### 4.1. Part I: Statistical analysis of the current status of projects in terms of project management standards

In order to statistical survey of the current status of the projects in terms of project management standards, checklists for main areas of project management knowledge including time, cost, quality and area of tender have been designed that included in forms of tables below (table 1,2,3,4):

Table 1: Checklist of standard audit for the knowledge body of the project area management

Code: Date:	Field of Knowledge: Project area management	Auditor name Audited name and position:				
Question Code	Questions	very low	low	Intermediate	High	Very high
1-1	How much of the project chart has been used for the planning of the project area?	11	14	22	18	16
1-2	How much of the preliminary explanation for the project area has been considered for planning?	15	18	21	12	16
1-3	Has the project management planning ever been considered for the area planning?	9	24	20	14	9
1-4	Has the deliverable material been considered to audit the area?	18	17	19	12	16
1-5	Has the information of the work performance been used to control the area?	7	12	28	21	14
1-6	Are the approved change requests used to define the area?	19	22	24	10	7
1-7	Are the environmental factors of the organization used for project area planning?	14	24	23	12	9
1-8	What amount of organization process assets was used to plan the project area?	8	21	31	12	0
1-9	Has a systematic approach been considered to apply the variations of the project?	24	15	14	11	6
1-10	Has a system been defined in order to change the work breakdown structure (WBS), area explanation, etc. based on the possible variations?	26	24	9	3	0

Table 2: Checklist of standard audit for the knowledge body of the project time management

Code: Date:	Field of Knowledge: Project area management	Auditor name Audited name and position:				
Question Code	Questions	very low	low	Intermediate	High	Very high
2-1	Is the explanation of the project area involved in defining the project activities?	17	26	14	13	12
2-2	Is the work breakdown structure system (WBS) used to define the project activities?	14	27	23	14	4
2-3	Is the project management planning considered to define the project activities?	9	14	29	18	12
2-4	How much does it consider resource access to provide the project schedule?	8	18	24	16	16
2-5	How much is the availability of resources for evaluating the resources of the project activity?	10	15	37	12	8
2-6	Is the estimation of activity cost used to estimate the duration of the project activity?	10	13	34	13	12
2-7	Is the risk record considered to estimate the duration of the project activity?	16	22	22	12	10
2-8	How much the performance reports has been applied to control the timing of the project?	6	15	34	13	15
2-9	How much the past records of the previous projects has been considered to define the project activity?	9	14	27	18	14
2-10	Is the project-scheduling plan prepared?	7	13	35	17	10
2-11	Given the results of timing control, are the proposed modification measures determined?	4	16	30	17	15

Table 3: Checklist of standard audit for the knowledge body of the of the project cost management

Code: Date:	Field of Knowledge: Project area management	Auditor name Audited name and position:				
Question code	Questions	very low	low	Intermediate	High	Very high
3-1	Is the explanation of the project area considered to estimate costs?	10	22	28	14	8
3-2	Is the Cost Management Plan considered for cost estimation?	11	16	31	13	11
3-3	Are the contracts of purchasing the engineering services applied for budgeting?	4	14	25	21	25
3-4	Is the project scheduling plan used for budgeting?	8	13	25	21	25
3-5	Are the performance reports used to control costs?	12	19	26	13	12
3-6	Are the archived data and past records used to estimate costs?	15	19	26	12	10
3-7	Are the organizational policies served to estimate costs?	13	18	25	16	10
3-8	Are the market conditions considered to estimate costs?	16	19	22	13	12
3-9	Are the commercial databases used to estimate costs?	21	26	22	11	2
3-10	Are the cost estimations considered for the requests of variations?	17	24	22	12	7
3-11	Are the cost estimations updated based on the results of	14	17	23	16	12

	cost control?					
3-12	Is the cost of project implementation anticipated based on the results of cost control?	12	16	27	16	11

Table 4: Checklist of standard audit for the knowledge body of the of the project quality management

Code: Date:	Field of Knowledge: Project area management	Auditor name Audited name and position:				
Question Code	Questions	very low	low	Intermediate	High	Very high
4-1	Is the explanation of the project area considered for the Quality Planning?	8	13	20	23	28
4-2	Is the project management Plan considered for the quality planning?	5	12	36	19	10
4-3	Are the executed requested variations considered for quality assurance/ control?	13	16	19	22	12
4-4	Are the executed modification measures considered for quality assurance/ control?	13	21	25	14	9
4-5	Is the implemented troubleshooting considered for quality assurance / quality control?	7	14	24	23	14
4-6	Are the preservation measures performed before, considered for the quality assurance / control?	10	15	27	18	12
4-7	Has the deliverable material been considered for performing the quality control?	6	9	37	15	15
4-8	Are the standards and governmental rules considered for the quality planning?	12	16	24	14	16
4-9	Are the commercial databases considered for performing the quality planning?	15	24	28	12	3
4-10	Are the quality policy, approaches and guidelines of the quality planning considered?	7	15	29	17	14
4-11	Are the previously learned points considered for quality planning?	6	14	27	20	15
4-12	Is the Quality Management Plan prepared?	5	10	28	24	15
4-13	Are the quality standards determined?	13	18	26	13	12
4-14	Given the results of quality control, are the modification measured and requests of variations performed?	13	17	15	19	18

## 4.2 Discussion of evaluations in the current situation

After investigation and assessing the responses of experts, these answers are to be collected. The obtained results will be discussed as follows:

In part of project management, in response to the question "is the project management plan considered for the area planning?" most experts have positively responded.

The question, "Are the approved change requests used to define the area?" has faced less positive answers.

In the case of tenth item of the project management, the least positive response has been assigned to "defining an area explanation based on the possible variations in systematic project in order to change the work breakdown structure (WBS)"

In time management, presenting the performance reports and preparing scheduling plans have received the least negative response.

In cost management, the choice of "applying the commercial databases to estimate costs" has received the least positive answer.

In quality management, the choices of quality planning and applying the commercial databases for quality planning have received the least negative score and the least positive response, respectively.

The results of summarizing the audit results and completing the corresponding checklist forms are provided in the following graph. The horizontal axis represents the qualitative verbal expressions.

As you can see, the highest rate of compliance is related to:

1. The factors of project management body of knowledge about time management and quality management.
2. Project management knowledge of scope and quality management.

As the completed checklists imply, in both cases, the presence of specific processes and high levels of compliance is due to the fact that they are entered into the organization through project contract documents and as input data:

A time schedule attached to the project contract contains key project milestones and is an appropriate basis for time management.

The technical specifications and the contract conditions of the project are considered a good basis for quality management and scope management.

But what is clearly evident is that there are many weaknesses in the factors outside the standard scope of the project management body of knowledge (figure1).





Figure 1: summarizing qualitative assessment of the standard in IRAN projects  
(1) Very low, (2) low, (3) average, (4) high, (5) very high

#### 4.3 Part II: The evaluation of distinguishing standards criteria by using TOPSIS method

Multi-Attribute Decision Making (MADM) approaches are formal methods used to organize the information and evaluate decisions in areas with multiple conflicting objectives. These methods can help decision-makers understand the results of comprehensive assessments and use the results in a systematic way. MADM methods are widely used in many fields of research from which different approaches have been proposed by various researchers (Wang et al. 2009).

TOPSIS method was originally developed by Hwang and Yoon in 1981. According to this technique, the best alternative has the shortest distance from the positive ideal solution (PIS) and the longest distance from the negative ideal solution (NIS). The positive ideal solution is one that has the maximum benefit and minimum cost and the negative ideal solution is that with the

minimum benefit and maximum cost. In TOPSIS method, in addition to taking the distance of alternative  $A_i$  from the ideal point, its distance from the negative ideal point is also considered. This means that the chosen alternative must have the shortest distance from the ideal solution while having the longest distance from the negative ideal solution. As its name implies, the ideal solution is the best one in every respect which is virtually not possible and one will try to approach it (Moraveji and Mohammadipour, 2009).

In this part of the article, TOPSIS analysis approach used in most engineering problems is utilized to evaluate, analyze and compare the result. The standard prioritization and the distinction criteria in project management have been achieved using the expert judgments in this area and by analysis parameter assessment TOPSIS software. The standards and criteria have been categorized into four groups and eight criteria presented in the table 5.

Table 5: Prioritization of standards and standard criteria for project management

Standard	Attribute	Criterion	Attribute
PMBOK2008	A1	1. The distinction between project management and competency standards	C1
PRINCE2	A2	2. Application in various projects	C2
OPM	A3	3. Provide competency with respect to the definitions accepted in the world	C3
ISO-10006	A4	4. Compliance of knowledge competency with the standards	C4
		5. Compliance of performance competency with the standards	C5
		6. Levels of examined competency	C6
		7. Type of admission	C7
		8. Evolution of behavioral competence	C8

##### 4.3.1 Create a decision matrix

A matrix will be drawn at this step having alternatives in its rows, attributes in its columns and the weight of each attributes

in the last row, and the intersection of rows and columns gives the importance of each respondent for any of the alternatives with respect to the corresponding attributes (table 6).

Table 6: Decision matrix (N)

index criteria	$C_1$	$C_2$	...	$C_n$
$A_1$	$r_{11}$	$r_{12}$	...	$r_{1n}$
$A_2$	$r_{21}$	$r_{22}$	...	$r_{2n}$
$\vdots$	$\vdots$	$\vdots$		$\vdots$
$A_m$	$r_{m1}$	$r_{m2}$	...	$r_{mn}$
$W_j$	$W_1$	$W_2$	...	$W_n$

$r_{ij}$  is the score of  $i$  th alternative in  $j$  th attribute and  $w_j$  is the weight of  $j$  th attribute.

The following algorithm provides the relations of standards and criteria in TOPSIS pattern of the project.

Note that the decision matrix (Table 7) is the arithmetic mean of all expert judgments.

A1-A4: standards, C1-C8: criteria

Table 7: Decision Matrix (N)

	C1	C2	C3	C4	C5	C6	C7	C8
Index type	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive
A1	6.5	5.7	7.7	6.5	7.5	8.935	6.5	6.5
A2	5.5	5.5	5.9	6.5	7.5	7.25	5.3	5
A3	6.5	5.4	6.8	6.54	7.5	7	5.35	4.88
A4	6.5	6.25	6.27	5.5	7.5	6.5	5.5	6

#### 4.3.2 Normalize the decision matrix

In order to be comparable, the decision matrix is converted to the normalized (incommensurable) matrix using Eq. (2).

$$n_{ij} = \frac{r_{ij}}{\sqrt{\sum_{i=1}^m r_{ij}^2}} \quad (2)$$

Table 8 shows the incommensurable matrix:

Table 8: Incommensurable matrix ( $N_I$ )

	C1	C2	C3	C4	C5	C6	C7	C8
A1	0.334	0.298	0.361	0.34	0.353	0.452	0.32	0.345
A2	0.283	0.287	0.278	0.34	0.353	0.366	0.261	0.266
A3	0.334	0.282	0.323	0.34	0.353	0.354	0.264	0.259
A4	0.334	0.326	0.32	0.288	0.353	0.329	0.271	0.319

#### 4.3.3 Obtain the incommensurable weighted matrix

To obtain the incommensurable weighted matrix ( $V$ ), the incommensurable matrix (obtained from the second step) is multiplied by the square matrix ( $w_{n \times n}$ ) whose main diagonal elements are weights of attributes and other elements are zero.

$$V = N_I \times w_{n \times n} \quad (3)$$

Table 9 shows the incommensurable weighted matrix.

Table 9: Incommensurable weighted matrix ( $V$ )

	C1	C2	C3	C4	C5	C6	C7	C8
A1	0.024	0.021	0.026	0.024	0.025	0.032	0.024	0.025
A2	0.02	0.02	0.02	0.024	0.025	0.026	0.019	0.019
A3	0.024	0.02	0.023	0.024	0.025	0.025	0.02	0.019
A4	0.024	0.023	0.023	0.02	0.025	0.023	0.02	0.023

#### 4.3.4 Determine the positive and negative ideal factors

At this step, such options should be identified that are considered by the respondents as most important and least important factors. In other words, for positive indices, the positive and negative ideals are the largest and smallest  $v$  value, respectively; also, for

negative indices, the positive and negative ideals are the smallest and largest  $v$  value, respectively. This is expressed by Eqs (3) and (4).

Positive ideal

$$A^+ = \left\{ \left( \max_i V_{ij} \mid j \in J \right), \left( \min_i V_{ij} \mid j \in J' \right) \mid i = 1, 2, \dots, m \right\} = \{V_1^+, V_2^+, \dots, V_n^+\} \quad (4)$$

Negative ideal

$$A^- = \left\{ \left( \min_i V_{ij} \mid j \in J \right), \left( \max_i V_{ij} \mid j \in J' \right) \mid i = 1, 2, \dots, m \right\} = \{V_1^-, V_2^-, \dots, V_n^-\} \quad (5)$$

In this relations,  $J$  is positive index and  $J'$  is negative index. Table 10 shows the positive and negative ideals. The performance criteria obtained the least positive ideal and the 'number and type of involved organizations' and 'type of competence' criteria obtained the least negative ideals (figure 2).

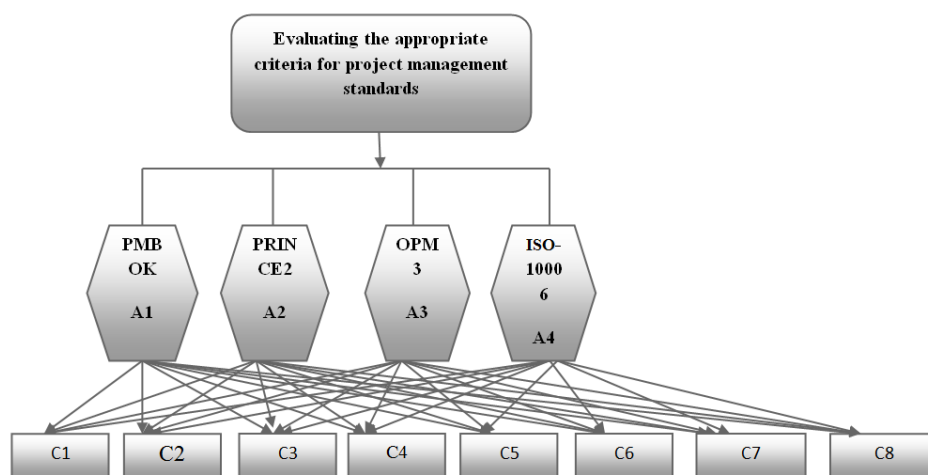


Fig. 2: TOPSIS network diagram for standard methods and criteria in project management

Table 10: Positive and negative ideals of each index

Criterion	Positive	negative
C1	0.029	0.02
C2	0.028	0.02
C3	0.026	0.02
C4	0.028	0.02
C5	0.025	0.022
C6	0.032	0.02
C7	0.031	0.019
C8	0.029	0.019

#### 4.3.5 Calculate the distance from the positive and negative ideals

At this step, the distance of each option from positive and negative ideals is determined according to Eqs (6) and (7).

The distance of  $i$ th option from the positive ideal is

$$d_i^+ = \sqrt{\sum_{j=1}^n (V_{ij} - V_j^+)^2} ; i = 1, 2, \dots, m \quad (6)$$

The distance of  $i$ th option from the negative ideal is

$$d_i^- = \sqrt{\sum_{j=1}^n (V_{ij} - V_j^-)^2} ; i = 1, 2, \dots, m \quad (7)$$

#### 4.3.6 Calculate the closeness level (CL) of each factor to the positive and negative ideals

At this step, the closeness level of each option to the positive and negative ideals is obtained by Eq. (8).

$$CL_i = \frac{d_i^-}{d_i^- + d_i^+} \quad (8)$$

Table 11 shows the CL values for each option.

#### 4.3.7 Step Seven: Rank the options

At this step, the options are ranked based on CL values; in other words, any option having a higher CL will earn a better ranking. Table 11 shows the ranking of options.

Table 11: Ranking of Options

Rank	CL	The ideal distance from negative	The ideal distance from Positive	choices
1	0.48	0.02	0.022	A1
2	0.425	0.019	0.031	A2
3	0.33	0.016	0.027	A3
4	0.295	0.014	0.022	A4

The results obtained from the ranking of options with TOPSIS technique indicate that the PMBOK standard in this country has taken a high priority over other options.

## 5. Solutions

If the weakness and distance from the requirements of project management body of knowledge are based on process plans related to the cases within each of the nine areas of project management, continuing and going through a recovery process

and performing periodic audit could be done to amend the procedure and reduce the distance to the standard. The organizational project management is the systematic management of projects in order to achieve the strategic goals of the organization. This concept that there is a direct relationship between the skill and ability of an organization to manage its projects and its success in implementing strategies, is the fundamental and theoretical basis of organizational maturity and organizational project management.

Although each of the projects may arise short-term, or at most, medium-term issues for the organization, the project management in an organization can create a strategic competitive advantage for the organization. The successful implementation of project management in the organization will lead to selecting the projects proportional to the organization's goals, properly allocating resources of project organizations, successfully completing the projects, and ultimately, the success of organization. An organizational maturity model represents a conceptual framework with relevant components to show the degree of maturity of the organization in the respective field. For some models, the process of transforming the organization from lower levels to higher ones may be described. The model may also be step by step (discrete) or continuous. Project management, time management, cost management and quality together can provide a complete view of the status of project management in an organization that also identify the susceptible areas of possible improvements. Accordingly, the following steps are recommended to be followed in the studied organization:

### 5.1 First step: Preparation for assessment

In the first step, the organization is prepared for the assessment of project management maturity. This objective is met through the perception of organizational project management and its benefits and understanding the standard components and performance.

### 5.2. Second step: Assessment

In the next step, the organization assesses its situation in different aspects described in the model. The first step is to define the superior strategies available in the organization and to determine the overall maturity of the organization in implementing the project management. Then, in second step, the skills proportional to any of the superior strategies that are available or not, are identified in the organization. Based on the assessment, an organization may 1) repeat assessment, 2) plan to establish and improve, and 3) get out of the standard cycle (for a given period). In the latter (which would be selected if the organization is satisfied with the current status of management), it is recommended that a time is set for repeating the assessment and reviewing the status of organization. The assessment check lists and documents are widely adopted in this step

### 5.3 Third step: planning the improvement

In management standards, organizations deciding to improve the project management use the results of previous steps as a basis for planning. Identifying the capabilities an organization may have or not, allows them to be prioritized based on the organization requirements depending on the interaction between them. According to this prioritization, organization can make a plan to achieve the results representing the presence of any of the required capability for implementing a superior strategy.

### 5.4 Fourth step: Implementing the improvement

In this step, the necessary organizational change occurs in the organization. The successful implementation of such organizational changes will lead to the acquisition of new skills by the organization and eventually, the progress of organization in implementing the project management.

### 5.5 Fifth step: Repeating the process

After implementing the planned improvements, organization can return to one of the second (re-assessment of organization maturity in project management) or third step (planning further improvements based on the previous assessment). Hence, after dynamic and continuous implementation and application of the standard within the organization and achievement of relevant results, one can carry out the tender management model in the studied organization. It is evident in implementing the recovery process that the weaknesses of organization should reach aright

level of compliance in the areas of greatest importance, ahead of the rest and with the passage of time and introduction of the aforementioned steps in other areas.

## 6 Conclusion

Although in recent years, the project management has been received much attention from many organizations and a considerable growth in this area has been made, improving the performance of project staff and particularly, project managers who are the foundation of project management, has received little attention. For a successful project to achieve its time, cost, and quality goals, a fundamental and important factor is having competent project managers. Therefore, it is essential to study the various competency standards of project management and their features as well as to identify similarities and differences between them. Hence, comparing competency standards and choosing the best option enables organizations to achieve their goals by using it given to the characteristics of the project. In this study, four applicable standards in the construction projects of the country were studied and compared. By comparing the competency standards of project management using TOPSIS technique and the obtained results, it was observed that the PMBOK standard is the best option followed by the PRINCE2 and OPM standards in the next priorities.

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**Primary Paper Section: A**

**Secondary Paper Section: AE**

# DETERMINING THE CATEGORIES OF FASHION BY PRICE AND QUALITY FROM A CONSUMER POINT OF VIEW

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**Abstract:** The principal objective of this paper is to determine individual categories of fashion based on the attributes of price and quality with respect to their perception by young consumers in the Czech Republic. These categories are subsequently labelled and assigned the fashion brands available in the Czech market and their respective price level. The study builds upon qualitative research using ten focus groups on a sample of sixty college students majoring in economics. Overall, nine categories of fashion were defined: second hand, Vietnamese retail, discount shops, supermarkets, cheaper conventional fashion, expensive conventional fashion, boutique, luxury fashion and fashion designers. The terminology and classifications introduced by this paper may serve as a starting point for future researchers and contribute to the streamlining of further research.

**Keywords:** fashion, fashion categories, fashion brands, quality, price

## 1 Introduction

Fashion is an exciting, dynamic and creative global business that combines the attributes of aesthetics, technology, and business, while creating a special and fascinating industry. Fashion is about self-expression, emotion, and identity and in a wider context, it defines cultural and social boundaries (Hines and Bruce, 2007). Over the last 20 years, the fashion industry has rapidly evolved and expanded to other sectors such as jewellery and perfume production (Djelic and Ainamo, 1999). Fashion slowly becomes a dynamic environment of mass production (Doyle et al., 2006). Customers expect low prices and thereby push the producers to reduce production costs (Priest, 2005). This phenomenon led to the relocation of production of numerous companies to countries with low labour costs (Kilduff, 2005; Lowson, 2001; Mattila et al., 2002), mainly to the Middle East, followed by Italy, Portugal and Turkey (Vinhas Da Silva, et al., 2002). Profits of the fashion industry keep growing, mainly due to increasing fashion consumption by the female population that nowadays has larger disposable incomes compared to the past decades and is thus able to buy desired items independently (Hayes and Jones, 2002). Retailers are, therefore, constantly trying to increase their sales volumes (Workman and Kidd, 2000).

The fashion market currently represents a very competitive environment and, therefore, retailers cannot win customers by simply offering the best price, but also by introducing new and innovative products to the market (Christopher et al., 2004; Evans, 1989). Frings (2002) suggests that constantly changing customer needs are strongly dependent on their changing lifestyles and thus lead to a constant demand for new fashion trends. Traditionally, the fashion cycle depends on seasonal trends and fashion shows by prestigious fashion houses that typically take place twice a year (Birtwistle et al., 2003). The customers nowadays desire to buy tomorrow those outfits they just saw today on well-known personalities on television. The fashion cycle has therefore shortened to approximately one month (Sull and Turconi, 2008). These enormous changes also affect the structure of fashion supply chains and led to structural changes in retail markets (Doyle, et al., 2006).

For these reasons, the current fashion market has become very difficult to read. Goods are offered in both stores and on the Internet (Marketing Newspaper, 2013). There are different prices, quality and prestige levels for each brand (Bruce Daly, 2006). Clothes are being sold not only in specialty stores but also in supermarkets among other commodities (Birtwistle and Moore, 2007). However, for research purposes in the field of fashion, it is necessary to define the various existing categories of fashion and unify their characteristics. In the Czech Republic (CR), there is currently no such terminology that would provide

the foundations for further research. This article aims to segment the fashion market in the Czech Republic, using the attributes of price and quality as perceived by consumers as sorting criteria and, subsequently, label these categories to make them easier to understand. Using the focus group approach, respondents were asked for their opinion on the categories of clothing as well as different fashion brands. Based on these interviews it was possible to characterize and label individual fashion categories and assign those brands available on the Czech market. The findings presented in this paper may be considered a foundation for future research in this area.

## 2 Categories of fashion brands

The theoretical portions of this paper summarize the findings presented in the current literature on the topic of fashion brands. As is apparent from the review, fashion categories are designed based on various criteria and perspectives and thus differ for individual countries.

A very traditional concept of fashion categorization was designed by Sorensen (1995). The highest level of this categorization is the 'Haute Couture Houses' (high handmade fashion). This term was created in Paris and refers to manual work of the highest quality, custom made for a specific customer. These designers reveal their collections only twice a year at prestigious fashion shows. The second level of this hierarchy is represented by 'Designer Wear'. This style of fashion is also very expensive; however it is characterized by limited editions and not by original items. Collections are made accessible for wider consumer groups and prices range in the hundreds of pounds rather than thousands of pounds. The third level is represented by 'Mass Market' or, 'High Street Fashion', which is designed for a wide range of customers and the clothing is sold at affordable prices. Yet the resulting quality of workmanship is lower. However, Sorensen himself questions this classification, stating that at this time there are already a number of other categories of fashion. This hierarchy may thus be considered as the basic classification by level of price and quality, although it provides only three categories that may be considered insufficient and not reflecting the real market.

The English concept of fashion categories was introduced by Anne Priest (2005). Her first category is labelled 'International Superbrands' and it regroups internationally known worldwide luxury brands. According to Priest, a second category called 'UK (London) style' describes local fashion designers and students of design schools. The importance of this category lies in the generation of new ideas and the refreshment of daily fashion. The third category is called 'McFashion' and was initially defined by Lee in 2003 (Lee, 2003 in Priest, 2005). This group includes international clothing chains with high street fashions that are characterized by chic clothing, which respects the same principle as fast food chains - a reasonable quality for a reasonable price, targeting the largest social class. Among the representatives of this category, we may find Zara, H & M and Marks and Spencer, as well as fashion available in supermarkets. The last category of the hierarchy introduced by Anne Priest she calls 'micro market' and contains fashion inspired by non-consumer styles of living, such as spiritualism, and ethnic minorities. In terms of marketing strategies and terminology, this division is not very common, even though it is designed by experts on fashion. Individual categories are created according to consumer segments and the overall philosophy of fashion companies; yet do not consider such criteria as price and quality.

Authors Moore and Burt (2007) proposed another classification of fashion, taking into account consumer segments, methods of distribution and the type of products offered. They divide the market into three segments. First, 'The fashion designer retailers', that regroups fashion from those designers who are known and respected around the world. Only leading brands

such as Gucci, Valentino, and Chanel meet these parameters. The second segment includes 'The product specialist fashion retailers' and represents a specialized market for narrow consumer segments such as sportswear (Nike, Adidas), women's clothing (La Senza) and the like. Their third category is called 'The general merchandise retailers', who offer both fashion and other products. The most famous representative in this category is Marks & Spencer. Their final category is 'The general fashion retailers', the broadest consumer segment that features a wide range of fashion products at lower prices.

Bruce and Daly divide the fashion market into four segments based on price and quality. These segments are: luxury and high street fashion, discount stores, supermarkets and discount stores outside shopping centres. They argue that the entry of supermarkets into the segment of apparel created a significant increase in competition and also changed the understanding of the process of buying clothes, allowing consumers to purchase fashion during ordinary grocery shopping (Bruce Daly, 2006). Supermarkets build their strategy on a narrower range of clothing, which is to some extent 'in' and fashionable, available at a reasonable price (Birstwistle and Moore, 2007). Supermarkets aim at the lower strata of customers who cannot afford to buy average fashion and don't mind shopping in supermarkets (Hines, 2007).

As it is apparent from the review of international academic sources that approaches to categorize fashion vary widely. There is very little consensus even in terms of the definition of luxury fashion.

### 3 Specifics of luxury fashion

De Barnier et al (2012) states that many authors mention the three levels of so-called luxury brands which are: upmarket products, expensive products, and luxury products. According to Tynan, when determining the boundaries of luxury fashion the key element is the consumer so where the ordinary ends and luxury starts is a matter of degree as judged by consumers" (Tynan, et al., 2010). Therefore, Barnier et al (2012) conducted a survey, designed by the authors Kapferer, Dubois and Vigneron, which tested the three rating scales determining luxury brands. The survey focused on five brands that were chosen as representative of these three levels of luxury. The results confirmed the existence of these levels. The authors further state that 'low level' luxury brands are occasionally collectively referred to as premium brands. This designation can be found also in the research presented by Kozáková, who studied fashion brands in the Czech Republic. According to her, 'premium brands' target larger scale markets. Consumers are more sensitive to price and their buying decisions are based on higher degrees of comparison (Kozáková, 2005). Premium products are also associated with lower expected value, which corresponds to a lower level of prices (Riley, et al., 2015).

In contrast, luxury fashion is based on creative designs from top fashion designers and aims to create exclusive collections presented to the public twice a year (Fionda and Moore, 2009; Husic and Cicic, 2009). Consumers buy luxury fashion, among other things, because of prestige, self-image and a lifelong relationship with the brand (Goldsmith et al., 2011). In the Czech Republic the situation is rather specific. According to the Obruk agency, luxury in the Czech Republic does not yet offer a means to satisfy all of the above described requirements, but is limited primarily to demonstrating social status and the desire for recognition (Obruk, 2010).

### 4 Price and quality as the determining factors from the consumer perspective

Kotler (1998) states that, although in recent decades the importance of other factors influencing the consumer buying decisions has considerably increased, price still is one of the most determining factors. Many consumers perceive price as an indicator of quality. Thus, in their eyes price equals quality (Erickson and Johansson, 1985; Hasen 2005; Ding et al. 2010;

Jobber, 2010; Beneke and Carter, 2015). However, price, unlike quality is immediately recognizable and thus may determine the degree of subjective perception of quality for little known products (Yoon et al., 2014). There are consumers whose purchasing decisions are affected exclusively by price. However, most consumers evaluate price and quality, along with other factors (Beneke and Carter, 2015; Grewal et al., 2007). Quality is very important, especially for high-end fashion. In a survey of luxury brands in the Czech Republic, quality was chosen as the most important attribute (Obruk, 2010). It is, therefore, evident that high quality in the eyes of consumers gives the appearance of luxury (Novotová and Cinkánová, 2015; Park and Park, 2003).

### 5 Purpose of the study

The main objective of this qualitative research is to understand and describe the fashion market in the Czech Republic from the perspective of young consumers and determine the categories of clothing according to price and quality. The main objective consists of four sub-goals:

- 1) Determine the categories of clothing brands according to quality and price from the consumer perspective, and label them.
- 2) Characterize these categories from the consumer point of view.
- 3) Based on consumer preferences, categorize known clothing brands.
- 4) Compare the classification of brands made by consumers with actual price levels.

Sub-goals 1 - 3 were achieved using focus groups. Sub-goal 4 was achieved by comparing price levels of fashion brands according to the current prices in the Czech shops in the summer of 2016.

### 6 Methodology

Due to the highly fragmented nature of terminology in the area of fashion brands as well as the lack of studies in the Czech Republic related to this topic, an explorative approach of research was chosen. With regard to the research topic, the qualitative research method was chosen, which allows an in-depth examination of the issues without prior knowledge of the topic (Hendl, J., 1999). Quantitative methods are able to capture different perspectives of studying the issue, its intricacy and complexity. Qualitative research is also very often used as an explorative approach in situations where it is necessary to gain insight into the examined subject (Mason, 2002).

#### 6.1 Data collection methods

Focus groups were chosen as data collection tools. Focus group research represents a data collection method that consists of using group interactions that arise spontaneously and inspire ongoing debate on a predetermined topic (Morgan, 2001). This method of data collection is quite frequently used for exploratory research, the aim of which is the analysis of the topics with little information available and for which it is difficult to formulate an exact and complete set of questions (Malhotra, 2012).

Unlike individual interviews, focus groups provide the great advantage of interaction between participants, which improves the quality of data obtained. Participants may confront or support one another and thus their opinions tend to gain a certain equilibrium (Švaříček and Šedřová, 2007). The sample was selected by a non-probabilistic method of selection, which saves time and lowers costs, but unfortunately is not representative. However, according to Malhotra (2012), this sampling method is acceptable for exploratory research. Respondents were students, aged 23-25 years in the Business Economics Master's degree program at the Faculty of Economics of the Technical University in Liberec. 70% were female and 30% male. 60 students participated in total. They were divided into ten groups of six participants, a number considered to be optimal Patton (2002).

Tab. 1: Categories of fashion brands as divided by focus groups (Source: author)

1. group	second hand	Asian market	Czech market	grocery stores	Vietnamese retail	secondhand selling brands	common stores	luxury stores	luxury shops	tailored made
2. group	second hand	Vietnamese	discount retail	common	boutique	luxury stores	specialized			
3. group	low cost	lower Middle	upper Middle	boutique	top class					
4. group	second hand	supermarkets	fashion chains	small	hightend					
5. group	second hand	Vietnamese retail	hypermarket	outlet	moderate	retail upper level	sportswear	skate shop	luxury boutique	
6. group	low end	good bargain	reasonable	high end						
7. group	Vietnamese retail	moderate	luxury	sportswear						
8. group	cheap	affordable	expensive	luxury						
9. group	secondhand	cool	reasonable	quality	upscale	Pařížská				
10. group	secondhand	low quality	moderate quality	luxury	extra luxurious	small retailers				

Each focus group was led by a moderator who, at the beginning of the session, introduced to the participants three topics that were subsequently discussed. In order to achieve clarity and a certain level of structuration, the respondents were asked to write down their ideas on a large sheet of paper. Each group of respondents thus created their own mind map. Mind mapping represents a creative way of keeping notes, analyzing problems and finding new solutions. These attributes make of it an ideal method for group problem solving (Buzan, 2012). During the first stage of the Focus Group session, the participant discussed the topic of categories of fashion brands. The moderator pointed out that the main decision factors are price and quality. Each group was asked to choose their own approach to problem solving. Mind mapping technique was very helpful especially in this phase since it helps and draw various categories of clothing. Subsequently, in the second and third phase, the participants were asked to assign attributes and tags to the previously defined categories. Interviews with the individual groups were recorded in order to evaluate the different perceptions and views of the respondents.

## 7 Findings

In this chapter the research results are presented and discussed. The research results are demonstrated on four chapters.

### 7.1 Classification of fashion brands

The research results are described in Table 1, which shows the various categories of fashion brands as they were sorted by different groups of respondents. Each line represents one focus group. Table 1 shows that focus groups 1 and 10 created the largest numbers of categories and went into detail especially in the lower categories. They differentiated for example between Czech and Asian marketplaces, between common second hands and those selling better-known fashion brands. This division may be judged as somewhat disorganized. Focus group five created 9 categories and, at the same time, was the only group to mention outlets, skate shops and sportswear. Sportswear as a separate category was highlighted by other groups as well. However, none of the groups was able to classify sportswear by price and quality. Thus this category was merged with the category labelled 'other type of clothing' for further research purposes.

Based on the researcher's judgment, the same or very similar categories were marked with identical colours. Ambiguous categories (low end) and categories identified by only one group (the Outlet, Czech market) remained unmarked and were not included for further analysis. The purpose of this step was to achieve better organization of the table for further processing. Subsequently, the same colours were regrouped into nine categories of fashion, which are represented in Table 2. Each category was assigned a label that was created based on feedback from respondents, findings from the literature review and also regarding the logic and general information capability of the names.

Tab. 2: Categories of fashion brands (Source: author)

1	second hand	second hand
2	Vietnamese retail, Asian market	Vietnamese retail
3	mixed goods, good bargain, discount stores, cheap, low quality	discount shops
4	supermarket	supermarkets
5	common stores, good ration of price/quality, lower middle, common confection, fashion chains, moderate, affordable, cool moderate quality	cheaper conventional fashion
6	upper middle, quality	expensive conventional fashion
7	boutique, expensive, luxury stores, upper class, luxury lower class	boutique
8	luxury, top class, high end, high, Pařížská, extra luxurious	luxury fashion
9	tailored made fashion, small fashion brands, small retailers, fashion designers	fashion designers

### 7.2 Description of the fashion categories

The second objective was to characterize the various categories of clothing.

#### 1) Second Hand

Most students perceive second-hand shops as the cheapest. Yet on the other hand, they consider them as providing relatively good quality due to the fact that although they offer pre worn clothing, it very often originates from high-quality brands.

*"I shop at a second hand that takes goods from the UK and most of the clothing is better than at New Yorker."*

Based on this statement, one might conclude that second-hand does not always comply with the rule that price matches quality. Many students perceive it as an advantage that this type of shop provides original pieces they could not normally afford. Disadvantages include fashion that may not be contemporary and also the fact that the clothing has already been worn by someone else.

#### 2) Vietnamese retail

Vietnamese shops emerged in the Czech Republic in the 1990s when a large number of immigrants from Vietnam came to the country and opened very cheap clothing stores there. These stores are rather negatively perceived by students.

*"I do not like to go to these stores, as they constantly ask me what I want and I am very uncomfortable."*

Respondents also feel the quality of goods from these stores is very poor. This is the most important factor for them that discourage buying. They further assume that the goods are produced in a non-environmentally friendly way and with the help of an under paid workforce. Students consider the Vietnamese retail as socially irresponsible. An advantage is they are fashionable and offer a relatively wide range.

#### 3) Discount stores

Discount stores were defined as large grocery stores that are located in shopping centres or independent shops. Their main feature is an unorganized environment and clothes thrown in heaps. Discount stores may be seen as a good alternative for



those who cannot afford to buy clothes from designer stores. Respondents agree that prices are relatively low and correspond to the lower quality, but the stores definitely do not sell fashionable or even original clothes.

*“Clothes at discount stores are made completely without any concept or imagination. Everyone who wears these clothes looks the same. They certainly do not fulfil my idea of unique clothes.”*

A very uncomfortable buying experience and poor atmosphere in the stores are perceived as another disadvantage.

#### 4) Supermarkets

Supermarkets were very often associated by respondents along with discounts. Two groups, however, described them as a separate category. The largest advantage reported by the students was the availability of store, the possibility of parking, as well as a buying process that is not time-consuming. We may conclude that customers are attracted by the opportunity to combine purchases of food and clothing.

*“Me and my boyfriend, buy clothes only in supermarkets, when we go to get groceries for the weekend. He always says that he does not have the time to buy clothes elsewhere.”*

Students usually buy clothes at Lidl and Tesco, specifically the F & F brand. They, however, judged this brand to be of a higher quality and thus more expensive than the usual goods that are sold in supermarkets. This conclusion is supported by research, including business students in the UK. The research showed that students have a rather indifferent relationship with clothes from supermarkets, but those who buy the F & F brand consider it very good (Harradine and Ross, 2011). We can, therefore, conclude that the F & F brand is considered to be better than other brands distributed by supermarkets. Among the disadvantages of supermarkets, students often mentioned a relatively narrow range of clothes and unskilled staff.

#### 5) Cheaper conventional fashion

Shops belonging to this category are located mostly in shopping centres. These are brand retail chains that are available in a variety of countries. According to focus groups, students most often buy clothes in this category of stores. They admit that the clothes are not of a very good quality, but they are relatively cheap and considered trendy.

*“The quality of the clothes is not the best, but I cannot afford anything more expensive since I am a student.”*

*“The clothes are fashionable and thanks to the lower price you can replace it every season, and be always stylish.”*

appreciate the after purchase service which includes custom tailoring and an easy return policy.

These statements reflect the current trend of very frequent clothes swapping (Sull and Turconi, 2008). On the positive side, respondents evaluated these store environments as pleasant, and they highlighted the possibility to have loyalty cards and return non-fitting clothes. The downside of this type of fashion distribution, besides its quality, may be the reluctant staff and large numbers of examples of one type of clothing.

#### 6) Expensive conventional fashion

This category is very similar to the previous category, in terms of location – the shops are located in shopping centres as well. However, according to students, the prices and quality are higher and thus this category is treated as a separate type of fashion. Respondents agree that they do not buy clothes belonging to this category very often because they perceive the merchandise as being a little too expensive. According to the students, the range of clothes offered by these shops is more suitable for working people who are concerned about how they look.

*“These stores really attract me, but they are a bit too expensive. Sometimes I buy something in there but only discounted products.”*

The positive attitude of young Czech people towards discounts was also confirmed by Kvapilová Krbová (2016). In general, respondents rated this category of fashion as providing quality goods with fashionable designs for an appropriate price and described the shopping environment as more pleasant than in the previous categories. Students perceive the volume as a disadvantage and possibly socially irresponsible and environmentally unfriendly production.

#### 7) Boutique

Boutiques may be characterized as small independent stores that offer smaller collections of clothing at prices ranging in thousands of Czech crowns. It is very unusual for students to seek out and visit boutiques.

*“Boutiques are meant for people who want to look luxurious, but do not have that much money.”*

Respondents believe that prices in boutiques do not completely match the quality. And the very process of purchase is not seen as optimal by the young generation.

*“I am uncomfortable that staff constantly monitors me and asks what I want.” For the older generation, it is probably nice that staff cares for them, but I prefer handling it myself. I feel freer.”*

On the other hand, respondents agree that the clothes sold by boutiques are original, the staff is well educated and they also

Tab. 3: Classification of fashion brands into identified categories (Source: author)

second hand	discount shops	supermarkets	cheaper conventional	expensive conventional fashion	boutique	luxury fashion	fashion designers
Aukro	Ebay	Tesco- F&F	Kenvelo	Zara	Zara	Louis Vuitton	Beata Rajská
Vinted	Aliexpress	Lidl	New Yorker	Bershka	Bandi	Prada	Tatiana Kováříková
	Pepco	Glóbus	Reserved	Bushman	Blažek	Versace	Liběna Rochová
	Kik	Albert	C&A	Funstorm	Luggi	Dolce Gabbana	Blanka Matragi
	Gate		H&M	Billabong	Steilmann	Dior	
			Cropp	Mango	Mango	Bogner	
			Terranova	Marks&Spencer	Gant	Gucci	
			Time out	Camaieu	Guess	Guess	
			Tako	House	Pepe Jeans	Armani	
			Oodji	Promod	Desigual	Burberry	
			Contessa	Lacoste	Lacoste	Lacoste	
			Orsay	Orsay	Diesel	Chanel	
			Tally Weijl	Lindex	Replay	Calvin Klein	
				Next	Levis	Herme's	
				Nike	Michael Kors	Michael Kors	
				Adidas	Tommy Hilfiger	Tommy Hilfiger	
				Puma	The north face		

## 8) Luxury fashion

Selective distribution is typical for luxury fashion. In the Czech Republic, this type of fashion store is mainly located in Prague, more specifically on Paris Street. Focus group participants considered this type of fashion as very expensive and therefore nearly unreachable for them.

*“These clothes are being worn mainly by celebrities and wealthy businessmen. Personally, I would never buy something that expensive.”*

Luxury fashion shops offer exclusive shopping, after-purchase service and high design originality. For students, it is very important that the production of luxury goods does not take place in Asia and they consider these companies as socially responsible. Among the negative aspects, students named inflated prices, unavailability of goods and snobbery.

Tab. 4: Fashion brands and price levels (Source: author)

second Hand	7 €	Vietnamese retail	7-11 €	discount shops	7-14 €	supermarkets	7-22 €	cheaper conventional fashion	19-26 €
Aukro	7			Ebay	7,1	Lidl	7	Oodji	19
Vinted	7			kick	7,4	Albert	11	C&A	19
				Pepco	7,4	Glóbus	14,8	Tako	19
				Gate	12,8	Tesco- F&F	22,2	H&M	22,2
				<b>Terranova</b>	<b>13,3</b>			Cropp	22,2
				Aliexpress	14			<b>Bershka</b>	22,2
								<b>House</b>	22,2
								Reserved	26
								New Yorker	26
								Tally Weijl	26
expensive conventional fashion	30-74 €	boutique	89-260 €	luxury fashion	482-2937 €	fashion Designers	?		
Camaieu	30	Desigual	89	Bogner	481,5	Beata Rajská	?		
Funstorm	30	<b>Lacoste</b>	<b>89</b>	Burberry	1292,6	Tatiana Kovaříková	?		
<b>Kenvelo</b>	<b>33,3</b>	Levis	100	Dolce Gabbana	1333,3	Liběna Rochová	?		
<b>Time out</b>	<b>33,3</b>	Pepe Jeans	111	Versace	1450	Blanka Matragi	?		
<b>Zara</b>	<b>33,3</b>	Bandi	129,6	Gucci	2222	Klára Nadeždinská	?		
Next	34,4	Replay	138,9	Herme's	2407,4				
Promod	37	Luigi	148	Prada	2777,8				
Lindex	37	<b>Michael Kors</b>	<b>155,6</b>	Armani	2937				
<b>Mango</b>	<b>44</b>	Diesel	181,4	Chanel	?				
<b>Orsay</b>	<b>44</b>	Steilmann	185	Louis Vuitton	?				
<b>Comtessa</b>	<b>44</b>	<b>Tommy Hilfiger</b>	<b>188,9</b>	Dior	?				
Marks&Spencer	44	<b>Guess</b>	<b>192</b>						
Billabong	62,6	Gant	200						
Bushman	74	Blažek	259						
<b>Nike</b>	<b>70</b>	Calvin Klein	307,4						
<b>The north face</b>	<b>73,7</b>								
<b>Adidas</b>	<b>92,2</b>								
<b>Puma</b>	<b>122,2</b>								

## 7.3 Inclusion of individual clothing brands into proposed fashion categories

In the fashion industry, brands have always been perceived as extremely important. Brands generally provide a guarantee of interchangeability, mainly in those sectors producing very similar goods and that is exactly the case in the fashion industry (Bristow and Mowen, 1998; Keller, 2007). Therefore, the next

objective of the research consisted in associating fashion brands with categories that respondents perceive brands as being representative. Table 3 shows all the brands mentioned by

respondents. For the category of Vietnamese retail, respondents did not know any specific brand or name, therefore this category is missing. Into categories second hand and discount shops, students included internet shops such as Aukro, eBay and AliExpress, as they were often used to buying these types of clothes. In the supermarket category, respondents most often mentioned the F & F brand. It was found that even though respondents identified two categories conventional fashion, assigning individual brands to each of them was problematic in some cases. For example, the Comtessa and Orsay brands were

## 9) Fashion designers

Only three groups of respondents marked Czech fashion designers as a separate category. They found that, unlike luxury brands, the names of respected designers are not very well known. Most respondents remembered only Blanka Matragi, which is currently a very popular brand in the Czech Republic.

*“Fashion designers have stores in Prague and dress celebrities, but I have no idea if an average person is able to buy something in these stores.”*

In terms of quality, students associate designers with luxury brands, however, they assume that designers are more expensive. That is why fashion designers represent the top category of the hierarchy. Overall we conclude that students are unfamiliar with Czech fashion designers or their work.

included in both categories. Similar results were obtained for some brands (especially the Zara and Mango brands) in categories among the more expensive fashions and boutiques. This phenomenon was even more significant for the boutique and luxury fashion categories which both feature four of the same brands. As for the category of fashion designers, respondents were unable to come up with any names. We thus conclude that students are not very familiar with fashion designers.

## 7.4 Comparison of brands classifications according to the respondent perceptions and price levels

The brand represents a medium through which a company may position its product in the mind of consumers (Vysekalová and Mikes, 2003). This statement implies that brand is what consumers perceive. It is, therefore, important to clearly communicate brand identity, which contributes to the creation of the brand awareness, customer loyalty and also affects perceived quality (Aaker, 1996). According to Aaker, perceived quality does not necessarily reflect the actual quality of the product, but more reflects customer expectations and preferences, which may to some extent be influenced by the brand and its image.

Accordingly we must admit that consumer classification of brands into fashion categories by the quality and price conscious is very subjective and strongly influenced by brand image.

In order to compare differences between perception of price by respondents and actual price levels, price tags were assigned to individual brands. The price is judged as the only empirically verifiable attribute, if we do not take into account quality tests, which are not the subject of this article. Therefore, price may be used as a relatively objective factor for dividing goods into categories. For empirical comparisons, a specific type of summer dress with a wide waistline, straps, and knee length is appropriate. In terms of sports clothes, a tennis dress was selected and for brands that target male customers (Bandi and Blažek), the prices of formal jackets were compared.

The top row in Table 4 indicates a price range in Euros for each fashion category. Within the individual categories, the brands are sorted from the least to most expensive, and have been assigned an average price. In essence, the categories second hand, Vietnamese stores, discount shops and supermarkets have very similar price levels, which imply that it is both style and manner of distribution that make the categories different. Cheaper conventional fashion ranges up to 26 Euro and expensive conventional fashion up to 79 Euro. Sportswear brands were included in this category as well, even though they are far more expensive than the previous two categories. However, due to the way they are distributed and their position in shopping centres, sports brands certainly belong to this category. The difference between boutique and luxury fashion categories is very noticeable where the prices for summer dresses range in thousands of Czech crowns (260 euros) for boutique and in tens of thousands of Czech crowns (2937 Euro) for luxury fashion.

In addition, the table contains highlighted brands that were by the respondents classified into other categories. Four brands were incorrectly classified as luxurious fashion, but they definitely belong into affordable boutique category. For fashion designers, as well as for some luxury brands, it was not possible to determine the exact price, but it may be assumed that the price of summer dress designed by fashion designers will reach the tens of thousands of crowns (thousands of Euro).

## 8 Discussion and Conclusions

The primary aim of this paper was to define categories of fashion brands according to the attributes of price and quality, each of which play a pivotal role in the decision-making process of the consumer (Kotler, 1998; Hansen 2005). In this research, nine categories of fashion were identified. Second hand, Vietnamese stores, discount shops, and supermarkets are specific for the low prices and thus focus on lower income consumers. The respondents described second hand, unlike other categories, to be an original and therefore suitable for those who want to make a statement. Supermarkets may be perceived as the growing phenomenon of the last decade. Their position in the fashion market is increasing, mainly due to lower prices and very good accessibility (MarketLine, 2014). In addition, these categories, with the exception of supermarkets, are not yet reflected in the literature. One of the few classifications of fashion categories that include this segmentation is the aforementioned division proposed by Bruce and Daly (2006). This lack of interest is probably caused by the interactivity of this market due to low prices and a lack of well-known brands.

The category of cheap conventional fashion was identified as the median level of fashion. This level primarily attracts students. This category along with the category of expensive conventional fashion can also be called Mass Market and High Street Fashion (Sorensen, 1995; Bruce and Daly, 2006) and McFashion (Priest, 2005). Thus these categories are already described in the literature because of their great influence on the world of fashion. They are mainly represented by large international chains with clothes. The mass character of production and resulting burden on the environment and social irresponsibility were identified as their largest drawback. Respondents perceive

this characteristic as very problematic. On the other hand, students argue that they must buy their clothes somewhere and that they cannot afford something more expensive. This type of fashion is thus very popular and will remain so.

In the upper levels of the fashion, the hierarchy includes boutiques, luxury fashion, and fashion designers. In international scientific papers, these categories are referred to as Haute Couture Houses or Designer Wear (Sorens, 1995), International Superbrands (Priest, 2005), or the fashion designer retailers (Moore and Burt, 2007). The fact that students do not know the fashion belonging to this category may be considered a somewhat surprising result in terms of these categories. Even though these college students are majoring in Business Administration and in the future will probably have higher incomes, and their positions will require adequate clothing, they currently perceive these categories as snobbish and an unnecessary waste of money. They believe that especially the category of Luxury goods is overpriced and therefore the price does not match the quality. This result is consistent with the findings presented by Kvapilová Krbová (2016) who also proved that Czech youth does not recognize the ownership of branded goods as a symbol of prestige and success. These results contrast with many types of research focusing on the consumers of luxury brands, indicating that quality is the most important attribute and fully corresponds to the price (Novotová and Cinkánová, 2015; Phau and Prendegasta, 2000). We can, therefore, conclude that consumers of luxury brands perceive this fashion differently from those who do not buy it. This top category of fashion provokes conflicting emotions in people.

In the second phase of the research, the respondents were asked to assign each fashion category to clothing brands and consequent prices. These results indicate the interesting fact that respondents in some cases are not able to place the brand into an appropriate category. It is, therefore, evident that they are influenced by perceived brand image. Image is regarded as a reflection consumer perception of the brand in relation to associations that are held in the customer's mind (de Chernatony and McDonald, 2003; Keller, 2008). It is thus a subjective mental image (Reizebos, 2003), which is not identical with reality. The largest differences occurred between the categories boutique and luxury fashion, where respondents erroneously ranked most of the brands. This is consistent with previous research in the Czech Republic that showed Czechs wrongly perceive the value of some brands and conversely to other countries where they think the brands to be more luxurious than they actually are (Kozáková, 2005). This difference may be a result of the socialist past of the former Czechoslovakia and, therefore, the fact that people in the Czech Republic do not really understand fashion. Perhaps fashion companies make use of this ignorance.

In conclusion, the determination of fashion categories is a very subjective matter depending on the income of individuals, their social status or personal attitudes towards fashion. Fashion may be classified based on other criteria than just price and quality, for example, based on the customer segment, or type distribution and the range of goods offered. Differences in markets in individual countries, where fashion may be perceived differently and the status of specific brands may differ as well, are considered an important factor. The aim of this paper was to unify the terminology for the Czech market and create the foundations for further research in this area.

## 9 Limitations and future research

This research was designed as explorative and due to the differences in the perception of fashion in different countries, tailored mainly for the Czech Republic. Given the small financial resources for data collection, respondents were only young college students. Clearly, the results cannot be applied to the entire population. For further research, we recommend extending the sample to include all age groups, educational and income levels of consumers as well as verify the results using quantitative techniques. Comparing international findings or the

perceptions of different categories of customers appears to be a very interesting topic for future research. In addition it is also possible to focus on other attributes than price and quality to create distinct categories of labels.

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**Primary Paper Section: A**

**Secondary Paper Section: AE**

# THE OBJECTS OF CRITICAL INFRASTRUCTURE OF THE STATE AND ESTABLISHMENT OF THEIR SECURITY

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**Abstract:** Critical infrastructure has become a modern phenomenon and the problem of its security is very actual topic nowadays. For understanding mutual causalities among particular sectors of critical infrastructure, it's necessary to deal with their commitments or relations under which we can imagine a mutual influence and dependency of these sectors. The main aim of the article based on law regulation and strategic document analysis modifying the protection of critical infrastructure EU and analysis the critical infrastructure in SR through the use of pinpoint method, is to point out to the objective need of defense and act security of important national infrastructure objects against the traditional imminence.

**Keywords:** security, threat, critical infrastructure, risk, strategy

## 1 Scopes of the need to define a critical infrastructure

Critical infrastructure – the notion which is the subject of discussion in the field of academies, central bodies of public administration, at national and multinational level. Resourcing the contemporary security risks, the need to define critical infrastructure as itself in developed countries of the world has appeared within the field of infrastructure where destruction will cause serious political and economic consequences. More European countries are considered by terrorists as potential targets and Europe is one of the base of their operation. Terrorism is focused on the attacks against civilian population as well as critical infrastructure of the state with the goal to cause massive victims, damages, develop fear and feeling of danger.<sup>1</sup>

The Slovak Republic is likewise a subject to similar threats and challenges the other countries in Euro-Atlantic region face. Analysis of the risks is necessary assumption to understand the threats in more global world. Therefore, we elaborated a short analysis of critical infrastructure in the Slovak Republic in order to understand mutual relations among particular sectors of critical infrastructure in our article. We included nine sectors of critical infrastructure into the analysis, according to the National Program adopted in 2007 which we analyzed based on three factors of interaction, namely: the factor of the consequences scope, the factor of the number of affected sectors and the factor of space-time. In order to prove the practical way of understanding the sensitive elements of critical infrastructure and its sectors, we performed the comparison at the level of the Slovak Republic in comparison to other V4 countries (The Czech Republic, Poland and Hungary).

The main aim of this article is: *“Based on the analysis of legal regulations and strategic documents modifying the protection of critical infrastructure of EU and the analysis of critical infrastructure in the Slovak Republic with the help of point method, to point out the objective need of the security of the protection and the defense of important objects of national infrastructure against traditional threats.”*

Basic background documents are sourced from relevant legislation of EU and the Slovak Republic as well as from available domestic and foreign literature. Research methods we used come from the information on the past and present and apply heuristic approaches towards the future in order to achieve the prognosis how the following development will look like, thus what events or occasions can appear in future. There are a lot of various methods, processes available which are mostly focused on the revision of risks and on the evaluation of particular parameter of critical infrastructure. According to the selected

criteria, we chose point method from the great number of methods and processes. By the analysis of the protection of critical infrastructure in the Slovak Republic, we evaluated particular sectors (transport, water, food, health, energetics, ICT, public order and internal security, industry and financial sector) according to factors from the point of view of their importance for the operation of critical infrastructure as a whole, based on that the vulnerability of critical infrastructure in these sectors can be predicted.

We decided for the topic of critical infrastructure because of the fact that mentioned problem is understood as very significant and important field for keeping elementary functions of the state as well as keeping important needs for population, during crisis situations. We consider it as the field which still should search new possibilities, ways and effective solutions for the minimization of the threats of contemporary world.

## 2 Development of critical infrastructure in EU

European Union with its global position and population cares about the protection of the most important infrastructures of particular states. Terrorist attacks in Madrid, London, Paris emphasized the threat of terrorism. The need for the improvement of protection, readiness and the response of Europe to terrorist attacks focused on critical infrastructure was established, based on which the proposal to elaborate *European Program for Critical Infrastructure Protection* was adopted. The response of EU was to elaborate several documents solving the prevention, readiness and responses to threats threatening critical infrastructure focusing on the threat of terrorism.<sup>2</sup>

The elaboration of *European Program for Critical Infrastructure Protection* (hereinafter just “EPCIP”) and *Critical Infrastructure Warning Information Network* (hereinafter just “CIWIN”) belong among the significant documents. After the reflection of member states of EU and particular industrial communities, *Green Book on European Program for the Most Important Infrastructure Protection* (hereinafter just “Green Book”) has been elaborated by The Commission of the European Communities (hereinafter just “the Commission”) in 2005.<sup>3</sup> Document finds the opinions of member states of EU in the field of criteria on the review of critical infrastructure and it also emphasizes that there should be public administration together with private sphere included into critical infrastructure, while the significant responsibility for critical infrastructure protection must be taken by state.

It consists of alternative possibilities which the Commission can use for application of EPCIP and CIWIN. It specifies that the goal of EPCIP is to ensure to have the same levels of protective security of the most important infrastructure within the whole EU that should consist of the least number of weak points and fast and proved renewal mechanisms. The level of protection should not be the same for all the elements, but derived from possible impact that could cause the failure.<sup>4</sup>

*The Council Directive 2008/114/ES* (hereinafter just “the Council Directive”)<sup>5</sup> is of a particular significance, it modifies

<sup>2</sup> Predbežné stanovisko k návrhu smernice Rady o identifikácii a označení európskej kritickej infraštruktúry a o zhodnotení potreby zlepšiť jej ochranu – EÚ. Tlač: 2006 /0276 (CNS), Brusel 2006.

<sup>3</sup> Komisia európskych spoločenstiev. *Zelená kniha o európskom programe na ochranu najdôležitejšej infraštruktúry*. Brusel, 17.11.2005, KOM (2005) 576 as final amendment. [on line]. [cit. 2013. 6. 16]. Available on: [http://eur-lex.europa.eu/LexUriServ/site/sk/com/2005/com2005\\_0576sk01.pdf](http://eur-lex.europa.eu/LexUriServ/site/sk/com/2005/com2005_0576sk01.pdf).

<sup>4</sup> Komisia európskych spoločenstiev. *Zelená kniha o európskom programe na ochranu najdôležitejšej infraštruktúry*. Brusel, 17.11.2005, KOM(2005) 576 as final amendment. [on line]. [cit. 2013. 6. 16]. Available on: [http://eur-lex.europa.eu/LexUriServ/site/sk/com/2005/com2005\\_0576sk01.pdf](http://eur-lex.europa.eu/LexUriServ/site/sk/com/2005/com2005_0576sk01.pdf).

<sup>5</sup> The Council Directives 2008/114/EC from December 8th 2008 on identification and marking European critical infrastructures and evaluation of the need to improve their (U. v. EU, L 345/75, 23.12.2008), Brussels 2008.

<sup>1</sup> *Koncepcia kritickej infraštruktúry v Slovenskej republike a spôsob jej ochrany a obrany*. [on line]. [2008-03-11]. Available on: <http://www.economy.gov.sk/pk/2130-2006-1000/ma.doc>.

the duties and the progress for each member state in identification of the elements of European critical infrastructure (hereinafter just "ECI"), which fulfills three cross-sectional and sector-specified criteria. It also set the cross-sectional criteria and subsectors of energetics and transport. It does not exclude the application even to other identified sectors by other member states.

If we sum it up, there were following threats identified in strategic documents within EU:

1. Terrorism;
2. Mass destruction weapons propagation;
3. Regional conflicts;
4. State operation failure;
5. Organized crime.

Presented threats are more or less related to every member state of EU and, thus, its critical infrastructure. Directive does not exclude identification and classification of national threats and security risks regarding the elements of the system of ECI or national elements of critical infrastructure. Concurrently, it creates a sufficient legal environment for the elaboration of own generally obligatory legal regulations modifying the identification and protection of sectors and elements of critical infrastructure. Particular states of EU responded to the directive in various ways. Some of them adopted unique laws, some of them did not elaborate the directive deeper.

Within the North Atlantic Treaty Organization, the problem of critical infrastructure is dealt with the Senior Civil Emergency Planning Committee (SCEPC) of NATO which authorized its subcommittees by the research on general aspects of the protection of critical infrastructure as well as possible consequences in case of the violation. They publish more documents and studies with the recommending character, while the choice of the approach to these recommendations and their overall implementation is in the operation of every member state.

### 3 Analysis of critical infrastructure protection in the Slovak Republic

The first document which established the term "critical infrastructure" and defined it for the conditions of the Slovak Republic is the *Concept of critical infrastructure in the Slovak Republic and its protection and defense*.<sup>6</sup> Its resource is *Security strategy of the Slovak Republic*<sup>7</sup> authorized by the National Council of the Slovak Republic which declares that the Slovak Republic guarantees the security of critical infrastructure prior to terrorist attacks and also focuses on the minimization of the vulnerability of information and communication systems, especially systems necessary for the safe performance of basic state operations.

It is necessary to be aware that except of the current threat number one – terrorism – there is a range of other natural risks and threats such as: floods, earthquakes, wide-area fires or new mutations of diseases. Further on, risks result from: usual operation of industry, operation of economy, production, transport, consumption of goods and services.

By now, *Law no. 319/2002 Col. of Laws on Defense of the Slovak Republic* as amended, dealt with this problem, where the term defense infrastructure has been applied, which according to § 26 sec. 1 of this law consists of: "*The complex of real estates, buildings and facilities, telecommunication, communication and transport systems, which serves to secure defense of the state at the time of war or warfare*".

Currently, we often meet the polemics among central authorities of public administration in Slovakia, of the members of academic grounds, regarding the identification of the element of the system of critical infrastructure. Even though, that *Law no. 45/2011 Col. of Laws on Critical Infrastructure* identifies such an elements (fulfills sector and sectional criteria), there is not more significant shift/development of the Slovak Republic in this field. It is worth to look for the reasons of this stagnation. Related central authorities of public administration under the coordination of Ministry of Defense of the Slovak Republic deal with the fields of critical infrastructure from 1999 (established *Coordination Center for the Protection of National Infrastructure - CPNI*)<sup>8</sup>, or from 2002 when the objects of personal importance (strategic objects of defense infrastructure, which, when damaged or destroyed, can limit the protection of the state's defense) and other important objects (objects of defense infrastructure, which, when damaged or destroyed, limit the activity of military forces or the operation of economy of the Slovak Republic) were identified by *Law no. 319/2002 Col. of the Law on the Defense of the Slovak Republic* as amended.

*National Program for the Protection and Defense of Critical Infrastructure in the Slovak Republic* (hereinafter just "National Program")<sup>9</sup> adopted in 2007 determined the following nine sectors of critical infrastructure: *water, food, health, energetics, information and communication technologies* (hereinafter just "ICT"), *transport, public order and internal security, industry, financial sector*. The *Law no 45/2011 on Critical Infrastructure*<sup>10</sup>, which has been published in February 8<sup>th</sup>, 2011, adopted eight modified sectors. It adopted almost all sectors from the National Program, except of these sectors: *public order and internal security, food and financial sector*. The list has been extended in the sectors: *electronic communication and post office*.

If we sum it up, we deal with the problem of the protection of critical infrastructure in the Slovak Republic from 1999. It is 17 years so far and the result of so long effort is scant. Adopted government documents resulted just into *The Law on Critical Infrastructure* from 2011. In the following part, we characterize the sector of critical infrastructure based on factors.

#### 3.1 Characteristics of particular sectors of critical infrastructure according to the factors

For the understanding of mutual causalities between particular sectors of critical infrastructure, it is necessary to deal with their relations (under which we can imagine mutual activity and dependency of these sectors). However, in order not just to state that sectors depend on each other, we need to assess the relationships between sectors quantitatively as well as their qualitative factors working between sectors.

We used "*point method*" for quantitative expression of the interaction we used, which consisted in counting the points added on the basis of the review of three various aspects of the interaction of each sector. It is obvious that the failure of any sector will result in the limitation in sectors depending in it. However, these consequences can present not only *restrictions*, but even *threats*. When analyzing, this characteristics of sector has significant importance, therefore, we need to evaluate this area from the point of view of particular sectors and register it as the first aspect.

When analyzing the mutual interaction, we considered three factors of the interaction of sector:

1. *Factor of the range of consequences* – the way, how one sector can influence other sectors, how other sector can threaten the failure of one sector;

<sup>6</sup> Koncepcia kritickej infraštruktúry v Slovenskej republike a spôsob jej ochrany a obrany. Vláda Slovenskej republiky, uznesenie č. 120/2007, Bratislava, 2007.

<sup>7</sup> Bezpečnostná stratégia Slovenskej republiky. Národná rada Slovenskej republiky, Bratislava, 2005.

<sup>8</sup> The main task of the center was to develop and coordinate the activities necessary for the protection of critical infrastructure.

<sup>9</sup> Národný program pre ochranu a obranu kritickej infraštruktúry v Slovenskej republike. [on line]. [cit. 28.6.2013]. Available on: <http://www.minv.sk/?ochrana-kritickej-infrastruktury>.

<sup>10</sup> Zákon č. 45/2011 Z. z. o kritickej infraštruktúre.

2. *Factor of the number of stricken sectors* – we consider subjective revision; in case that sector A does not influence sector B, it is not proved that sector B won't influence sector A.
3. *Factor of the space-time* – time, during which the failure of one sector is proved in other sectors locally and globally.

We included all nine sectors (transport, water, food, health, energetics, ICT, public order and internal security, industry and financial sector) of critical infrastructure into this analysis according *National Program* adopted in 2007.

Based on the analysis of nine sectors according to three factors of interaction in Tables 1 – 4, we bring the results we got. In the following Table 1, we bring the range of interaction in sectors according to *restriction* and *threat*.

Table 1: Range of interaction in sectors

Sector	Restriction	Threat
Water	1	1
Food	1	1
Health	1	1
Energetics	1	1
Transport	1	0
ICT	1	1
Public order and internal security	1	0
Industry	1	1
Financial sector	1	1

We mark by:

1 point – existing relation in certain range,

0 point – non-existing relation in certain range.

Source: own elaboration based on the *National Program* data

In Table 2, as next aspect, we assessed sectors according to the number of other sectors of critical infrastructure influenced by them, as we added 1 point for each influences sector.

Table 2: Number of influenced sectors

Sector	Number of influenced sectors
Water	8
Food	3
Health	5
Energetics	8
Transport	5
ICT	8
Public order and internal security	2
Industry	7
Financial sector	8

Source: own elaboration based on the *National Program* data

As we can see in Table 2, the most influential sectors of critical infrastructure are: water, energetics, ICT and financial sector. The last aspect of revision is the factor of time-space.

In Table 3, we reviewed the speed of impact of failure of sector on other sectors in local and global measure. We added 2 points for fast impact, 1 point for slow impact.

Table 3: Evaluation of time-space factor

Sector	Time-space factor	
	Local	Global
Water	fast	fast
Food	slow	slow
Health	slow	slow
Energetics	fast	fast
Transport	fast	slow
ICT	fast	fast
Public order and internal security	fast	slow
Industry	slow	slow
Financial sector	slow	slow

Source: own elaboration based on the *National Program* data

Based on the elaborated analysis, we finally assessed particular sectors from the point of view of their significance for the operation of critical infrastructure as a whole. From the presented, we can further suppose the vulnerability of critical infrastructure in its particular sectors. After counting the points, we got the final Table 4 which says what range of the interaction between given sector and other sectors is, thus what share in the operation of critical infrastructure as a whole can we predict.

Table 4: Final assessment of analysis according to sectors

Sector	Number of points
Water	14
Food	7
Health	9
Energetics	14
Transport	9
ICT	14
Public order and internal security	6
Industry	11
Financial sector	12

Source: own elaboration based on the *National Program* data

Presented information are especially significant within the questions of the protection of critical infrastructure against terrorism. Any of the sectors cannot be neglected, neither underestimated. Analysis supposes how to choose priorities and the rate of investments to the protection of sector correctly. It requests stability, partnership cooperation among owners and operators of critical infrastructure and representatives of the governments of member states. The protection of particular elements of critical infrastructure is fully organized by legal person, owner or operator as a part of own arrangements for the protection of property. Governments of member states are responsible for the coordination of important political responses to the needs of the protection of critical infrastructure.

### 3.2 Comparison of the Slovak Republic to other V4 countries

For the purpose of verification of practical way of understanding the sensitive elements of critical infrastructure and its sectors, we did their comparison at the level of the Slovak Republic in comparison to other V4 countries (the Czech Republic, Poland and Hungary). The aim was not to name the right and complete names of the sectors of critical infrastructure of particular countries. The goal was to point out the sectors of critical infrastructure, which V4 countries consider important at national level. Other goal was to find out whether particular V4 countries are similar regarding their security threats and social-economic conditions. At the same time, we wanted to identify the same or close sectors of critical infrastructure based on how the Slovak Republic has identified them. We can see the comparison of the sectors of critical infrastructure at the level of V4 countries in Table 5 (own elaboration based on Vidriková, Broc, 2013).

Table 5: Sectors of critical infrastructure of the Slovak Republic in comparison with V4 countries

Sector	SK	CZ	PL	H
Banking and financial sector	√	√	√	√
Industry	√	√	√	√
Energetics	√	√	√	√
Public health	√	√	√	√
Governmental institutions, security and state protection		√	√	√
ICT and telecommunication systems	√	√	√	√
Transport and logistics systems	√	√	√	√
Water supply	√	√	√	√
Food		√	√	√
Science and research				
Building infrastructure and facilities				
Information services, media, cultural landmarks			√	
Emergency services		√	√	
Storage of hazardous substances			√	
Mail and postal services	√			

We can see in Table 5 that the intersection of the sectors of V4 countries are sectors regarding Banking and financial sector; Energetics; Public health; ICT and telecommunication systems; Transport and logistics systems and Water supply. The closest common sector are even Governmental institutions, security and state protection, sector marked even as Public order and internal security. Further on, as we can see in Table 5, except of Slovakia, other stated V4 countries consider it as the sector of critical infrastructure. The reason why the Law on Critical Infrastructure in the Slovak Republic do not exclude this sector, is not known. Although, it was identified in the *National Program*.

From the analysis of security situation during five years (since adopting the *National Program* and adopting the *Law on Critical*



Infrastructure), there are no changes/amendments regarding the security interests of the Slovak Republic or the security environment of the Slovak Republic or security threats, which were identified in the *Security Strategy* which was approved by the National Council of the Slovak Republic on September 27<sup>th</sup>, 2005. Based on this statement, we can assume that the changes in determination of sectors were not conditional by this document. We suppose, that the scope in determination of the sectors of critical infrastructure should not be just the recommendations of the *Council Directives*, but even the questions solved within security strategy.

For the purpose of finding the possible motives in determination of sectors of critical infrastructure, it is possible to use even causal relations. One of the possibilities of the research is even the use of cluster hierarchical agglomeration analysis by the method of the closest neighbor. We could perform the analysis of social-economic data of selected states of EU, or V4 countries, in our case, by mentioned method as a certain time period (according to the topicality and availability of data).<sup>11</sup> For the purpose of finding the similarities of particular states (with the use of presented social-economic data), we could find out e.g. Euclidian distances expressing the range of relationship or similarity. However, it was not the goal of our article.

#### 4 Discussion and conclusions

Infrastructure of Slovakia is similar to other countries: transport, energetics, chemical industry, defense industry, production and transport of dangerous goods, information technologies and telecommunication, financial institutions and insurance companies, drinking water supply, food supply, health and emergency services, waste removal, state and public administration, courts, police, armed forces, customs administration, media, research and education institutions and national cultural landmarks. Every part of infrastructure falls under the sphere of some of central state authorities and bodies, or bodies of local administration.<sup>12</sup>

Law no 45/2011 Col. of Law on the Protection of Critical Infrastructure creates the basic scope for the solution of the problem of the protection of critical infrastructure in the Slovak Republic. It objectively codifies new terminology and sets the parts of critical infrastructure. It has a priori goal focused on improving present protection of a part of critical infrastructure, which when corrupted or damaged could cause serious negative consequences only on regular operation of economy of the Slovak Republic.<sup>13</sup>

As a consequence, that the law sets the organization and the operation only of the bodies of public administration within a division of critical infrastructure, it does not set the obligatory criteria for the determination of an element of sector of critical infrastructure for the element of critical infrastructure, does not set the tools for the protection and defense of elements of critical infrastructure, the level of the security of particular components will vary and the overall level of the protection of critical infrastructure, except of the objects of defense infrastructure, will be insufficient.

The tasks of the management are of different character, range and significance at particular levels of management and during particular periods of time of crisis situation solution. That is the reason why particular levels of crisis management differ to each other in contents and range of fulfilled tasks, the range of

competencies and the possibilities of the use of powers and means, as well as the relationship to particular periods of crisis situations.<sup>14</sup>

Therefore, these levels of management are absent in identification and protection of critical infrastructure:

1. *International* – multinational level of crisis management (UN, NATO, OSCE, EU);
2. *National* – state level of crisis management;
3. *Regional* – county, district level of crisis management;
4. *Local* – municipal, metropolitan level of crisis management.

What does it consist of or what is the source of retardation factors which impede the Slovak Republic from more significant progress in this field? We think that one of possible reasons can be the question of real determination of element of critical infrastructure and its protection. Objects of personal importance and other important objects classified to defense infrastructure have practical identification solved. Even though, they are the part of the system of critical infrastructure, follow unique legal regulation, thus the law on critical infrastructure relates to it just marginally. Set sectors in reference with central authorities /organs of public administration of the Slovak Republic should help the identification of other elements of critical infrastructure by the Law on Critical Infrastructure. Their protection should be focused primarily on security threats set by the state.

Decreasing the vulnerability of the Slovak Republic is task of long-term character and national program together with adopted conception should be the first step to increasing the preparedness of the Slovak Republic to face mentioned threats. Next significant step should be the preparation of the legislation and elaboration of the program itself to particular tasks with quantification of necessary financial impacts on state budget.

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**Primary Paper Section: A**

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## THE CREDIT RISK AND ITS EFFECT ON THE PROFIT AND LOSS OF KESHAVARZI BANK BRANCHES (CASE STUDY KESHAVARZI BANK BRANCHES OF HORMOZGAN PROVINCE)

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**Abstract.** Credit risk is an important risk in the banking system and banks should pay special attention to it to do their activities regularly. The study examines the credit risk and its effect on the profit and loss of Keshavarzi bank branches. Indicators are including overdue receivables, outstanding receivables, collection of receivables, doubtful receivables and collaterals of doubtful receivables. Regression test was used to analyze and examine the hypotheses. The results showed that overdue receivables at the level of  $R^2 = 0/25$ , outstanding receivables  $R^2 = 0/422$ , collection of receivables  $R^2 = 0/809$ , doubtful receivables  $R^2 = 0/512$  and collaterals of doubtful receivables  $R^2 = 0/09$  are significantly able to predict and explain profits and losses in the Keshavarzi Bank branches.

**Keywords:** credit risk, overdue receivables, outstanding receivables, collection of receivables, doubtful receivables, collaterals of doubtful receivables, Profit and Loss

### 1 Introduction

Risk means the probability of not achieving the expected results. In other words, risk is interpreted as the likelihood of not happening future predictions. The risk cause is called "risk factor". Risk can be mentioned in every area. One of these areas is bank and banking activities. Due to their importance in the economic system, banks are of particular interest in this area. Banks are exposed to varieties of risks according to their types of activities. Based on the Bale Committee, risks in the banks include credit risk, market risk and operational risk (Yazdanpanah and Shakib Hajiagha, 2010).

Banking system is a key element of economic systems. If it functions correctly, it can contribute to the development of the economic system. Otherwise, it has heavy impacts on the economic structure. The banking system can play a strong role in the stability of financial system of the country (Shabani and Jalali, 2013).

Providing financial facilities is considered as one of the important activities of the banking system. The credit rating and ability to repay principal and interest of the recipient of facilities have to be determined in order to provide facilities. So, one of the important aspects of lending by banks is realistic estimate of the probability of not repaying by the customers in order to prevent of or cope with potential losses (Arabmazar, 2006).

The probability of not paying back the principal and interest of loans is called credit risk. Credit risk refers to the possibility of getting part of the credit portfolio of financial institutions outstanding or doubtful due to internal factors (such as lack of credit management, internal control, tracking and monitor) or external factors (such as economic recession, crisis, etc.) (Vakili Fard, 2010).

Since one of the pillars of the banks is to provide services to the society and the natural and legal characters at different levels of production, industry, services, agriculture and housing in the form of credit tools and providing facilities, followed by the issue of resources and consumptions of the banks the topic of receivables and its legal affairs come into the consideration. Receivables arise from the payment of facilities. So, its return and receipt cycle is of significant importance so that the quick and accurate flow of resources and expenditures reflects the health of systems and their procedures. Lack of attention to regulatory structure reform in the field of debt collection can lead the banking system to severe crisis including economic bankruptcy. Because the faster the process of collecting

receivables, the faster the process of putting non-exploitable resources in the cycle of economic activities. The credit risk is one of the most important factors affecting the health of the banking system. The level of credit risk depends on the quality of bank assets. The Bank is a financial institution that facilitates are its most important asset. If the asset is deferred, the bank will be at risk. Although paying facilities is one of the important functions of banks and its postponement causes the decline, the collection of receivables, as another function, can sustain the bank assets. Collection of receivables has several levels. Heads of the branches should create a positive image in the minds of customers through rational relationship and do their best to sustain the assets of the bank. Moreover, identifying factors related to credit risk of customers can aware the authorities. So, learning about the strengths and weaknesses they can do measures to reform the economic system and by raising organizational awareness they can also increase its productivity. Given the importance of the topic, the focus of this study was to investigate the effects of credit risk of customers and its effect on the profit and loss of Keshavarzi bank branches. The results can provide tailored information for managers of banks to use it in making credit policies of banks. (Faqih, 2005).

### 2 Literature review

In this part of the study, according to the investigating the impact of the participatory communication on financial performance and customers, first the concepts of risk and bank risk is discussed and then the facilities and the interest is investigated.

#### 2.1 Risk

Risk is defined as a phenomenon that causes actual and direct loss to the institute by reducing the flow of income and capital losses. Some economists have offered a broad definition of risk. They define as risk any event that potentially shakes the realization of organizational goals by exercising restrictions on capacity and activities of the organization. If we accept this definition, we know the risk as something inseparable from the economic system of the market. So, to define, identify and measure the risky phenomena will be inevitable in financial and economic activities. It is obvious that in the modern world of banking, paying no attention to the concepts of risk and return, diversification of investments, credit risk models, risk quantification and using of mathematical and statistical techniques for making optimal decisions can have irreversible risks for banks (Ghasemi, 2011).

In the common language, risk is a danger that occurs in the future due to the uncertainty about the occurring of an event and the higher the level of the uncertainty, the higher the risk (Esmaeel Nejad Ahangarani, 2014).

Webster dictionary defines the risk as "being in exposure with danger". Investment dictionary defines the risk as potential investment losses which can be calculated (Rasoulizadeh, 2006). Galitz considers the risk as fluctuations in any income. This definition makes it clear that future changes for a particular index, whether positive or negative, puts us at risk. Therefore, changes may cause profit or loss (safdari, 2008).

Risk is the possibility of facing with the loss or damage as a result of a special occasion and includes all the possibilities of injuries, damages and losses that affect achieving the goals of the organization. The meaning of uncertainty and risk are very close but they are distinct from each other. In the uncertainty, the least probability of a decision is not identified but in the risk possible scenarios as well as the probability of each state in the decision is clear (Vakili Fard, 2010).

## 2.2 Risk classification

Banks and financial institutions face a lot of risks due to the nature of their activities. Because of the breadth and diversity of bank activities, researchers are not unanimous in classifying the risks of banking operations. Some considers the risks of credit, interest rate and liquidity as principal risks of banking system. So, risks that affect the financial institution are divided into three levels as follows:

The first level: the risks on which financial institutions do not have any control and influence and are only affected by them.

The second level: the risk that financial institutions affect them but this effect is little and they are more affected by them.

The third level: risks that affect financial institutions, but financial institutions can bring them under their control and management by applying some methods and tools (Mohammad Rahimi and Mohammadi, 2010). So, it is only the third level risks that financial institutions can overcome and control them by applying methods and tools for risk management.

## 2.3 Common risks in banking operations

The most common risks in banking operations are the third level risks that are as follows:

### 2.4 Credit risk

Providing financial facilities is considered to be one of the activities of the banking system. For providing the facilities, the recipient credit rating and ability to repay the principal and interest have to be determined. Probability of not paying back the principal and interest of loans is called the credit risk. This risk can be raised in the following ways:

- The possibility of the reduction of the customer ability to repay the principal and interest of the received facilities.
- The possibility of not paying the principal and interest of the received facilities by the customer.
- The possibility of getting outstanding the repayment of principal and interest of received facilities by the customer. High-volume lending to a company, an industry group, or even an industry regardless of their credit rating is considered as factor enhancing the risk.

### 2.5 Liquidity risk

Liquidity risk arises from the inability of a bank to provide funds for lending or to pay timely its liabilities (such as deposits). When a bank does not have enough liquidity, it is not able to obtain adequate funds quickly and in reasonable cost through increasing liabilities or converting assets and this failure will affect the profitability of the bank. In acute conditions, lack of sufficient liquidity lead to the bankruptcy of the bank (the consultants group of comprehensive roadmap management, 2013).

Liquidity risk is manifested in various dimensions as follows:

- **Financing Risk:** unexpected withdrawal or not renewing the term of deposit by the customer make banks maintain unexpectedly the net outflow of such funds.
- **Time Risk:** the failure to achieve the expected arrival of funds from the repayment of loans granted to customers (resulting from the conversion of inflow facilities to outstanding one) forces banks to compensate for the lack of net inflow of such funds.

**Obligation risk:** is the risk arising from the clarification of obligations of banks (items below the balance sheet) that causes the bank to be unable to accept a lucrative and desirable trade opportunities (because of the high level of bank obligations) (Yazdanpanah and Shakib Hajiagha, 2009).

### 2.6 Operational Risk

There is no general and expert definition of operational risk. According to the latest Basel Committee definition of

operational risk in 2004, it is the "loss resulting from inappropriate internal processes, external events, system errors and human errors" .

The most important examples of operational risk are as follows:

- Internal fraud: embezzlement
- External fraud: forged checks
- Employment practices and workplace safety: noncompliance of proficiencies with the duties
- Incorrect ways of providing services: inappropriate lending processes
- Damage to physical assets: earthquake, destruction
- System error and commercial failure: computer system change
- Performance management, delivery management: vague directives.

### 2.7 Market risk

Market risk is resulting from the fluctuation in market rates or prices such as interest rate, exchange rate, stock price and commodity price and their negative impact on the value of the items inside and outside the balance sheet of financial institutions. This effects mainly resulted in the loss of income and capital.

### 2.8 Non-current facilities and credit risk

As all economic activity have a certain level of risk, banking activities have various risks. One of the risks refers to the impossibility of repayment of debts by the customers of the banking system and their reluctance to repay. So, overdue and outstanding receivables are common problems of banking activities (Borhani, 2010).

It should be noted in the banking literature overdue, outstanding and doubtful facilities refer to non-current facilities (loans) altogether. The ratio of non-current facilities to total facilities is one of the most important criteria in the banking system for measuring "credit risk". Furthermore, the increase in non-current receivables of the bank (outstanding, overdue and doubtful) and increase the supply of equipment for these receivables apart from the double impact on the increase of uncertainty in the return of resources and making more difficult the predictions to match the maturity of assets and liabilities, affect future profits and losses of the banks as well (Heidari and Ahmadian, 2011).

### 2.9 Profitability

Profitability is the mission, purpose and philosophy of organizations. Profitability indicates that applied resources are of efficiency and returns. Profitability is the abstract of all measures, strategies, practices and performances of the organizations. Nothing but a continual and growing profitability ensures survival and stability of the organizations. Becoming serious the discussion of privatization and advent of the private banks in the recent years, profitability in the financial institutions especially banks is in the focus. The Bank's profitability is a kind of index to determine the risk-taking behavior of bank managers. Banks with high profitability are under less pressure to generate income and so participate less in risky activities. Also, managers who manage costs poorly enter in risky activities and make their customers suffer losses ( Ahmadian and Heidari, 2013).

According to the aforementioned, conceptual model of the research can be reached in this section. Figure 1 illustrates this model. This model encompasses the relationships between variables. Research hypotheses are detectable based on the conceptual model and they will be presented later.

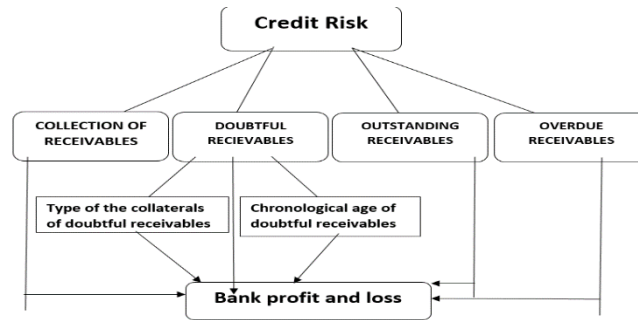


Figure1: conceptual model of the research

H1: Credit risk has an impact on profit and loss in Keshavarzi bank branches.  
 H2: Amount of overdue receivables has an impact on profit and loss in the Keshavarzi Bank.  
 H3: Amount of outstanding receivables has an impact on profit and loss in the Keshavarzi Bank.  
 H4: The collection of receivables has an impact on profit and loss in the Keshavarzi Bank.  
 H5: Amount of doubtful receivables has an impact on profit and loss in the Keshavarzi Bank.  
 H6: The collaterals of doubtful receivables have an impact on profit and loss in the Keshavarzi Bank.

### 3. Research methodology

The study is descriptive and in causal-comparative manner. In this study, comparing the credit risk of different branches of the Keshavarzi Bank, the impact of credit risk on profit and loss of this bank branches in the province of Hormozgan was investigated. So, the research is applied. Different levels of credit risk (low, medium and high) of the bank branches were compared based on their profit and loss. The population of this study includes all branches of the Keshavarzi Bank branches in the province of Hormozgan (37

branches) that their information related to 5 consecutive years from 2010 to 2014 were studied. The sample consisted of 37 branches of the Bank that were studied by census method. Library method was used to collect information about the literature. Observation, documentation, check listings and interviews were used to investigate and achieve the objectives. To analyze the data SPSS software was used. In the descriptive part for analyzing the data mean, standard deviation, variance, etc. were used. 4. Kolmogorov-Smirnov test and Levine's test were used for testing the normality of the data. Regression test was used to test the hypotheses.

### 4. Findings

First, the normality of the variables is investigated by Kolmogorov-Smirnov test. Next, according to the results of the tests we investigate the testing of hypotheses.

#### 4.1 Kolmogorov-Smirnov test

Kolmogorov - Smirnov test was used to investigate the normality of the distribution of data. Its results have been shown in Table 1.

Table 1. Kolmogorov-Smirnov test results

Profit and loss	Credit risk	Collaterals of doubtful receivables	Doubtful receivables	Collection of receivables	Outstanding receivables	Overdue receivables	Indices
0/69	1/18	1/15	0/87	1/242	0/838	1/012	Z score
0/72	0/11	0/14	0/42	0/09	0/4	0/2	Significance level

According to Kolmogorov-Smirnov test, the dependent variable is normally distributed because its significance level is more than 0/5. Since the variable has a normal distribution, parametric tests are used to analyze the data and test hypotheses.

#### 4.2 Variance Constancy test

Before examining the regression test, we must ensure that no sections have variance larger than 10 times the size of the smallest variance. If so, data must be converted to logarithms or standard scores (z). In this study, Levine test was used before investigating the data for the homogeneity of the variance of variables. Table 2 shows the results of the homogeneity of variance.

Table 2: Levine test to investigate the homogeneity of variance

Significance level	Second degree of freedom	First degree of freedom	F	Variable
0/13	3	1	4/14	Overdue receivables
/062	3	1	8/428	Outstanding receivables
0/23	3	1	2/258	Collection of receivables
0/07	3	1	7/329	Doubtful receivables
0/22	3	1	2/317	Collaterals of doubtful receivables
0/13	3	1	5/718	Credit risk
0/28	3	1	2/713	Profit and loss

As seen in Table 3, none of the variables are significant so the assumption of homogeneity of variances is confirmed.

### 4.3 Lack of correlation of predictor variables

Table 3: The results of Pearson test for correlation coefficient

Overdue receivables	Outstanding receivables	Collection of receivables	Doubtful receivables	Collaterals of doubtful receivables	Variable
1	-0/27*	-0/24*	-0/42*	0/29*	Overdue receivables
	1	-0/25*	-0/256*	-0/016*	Outstanding receivables
		1	-0/37*	0/22*	Collection of receivables
			1	0/176*	Doubtful receivables
				1	Collaterals of doubtful receivables

\* Confidence level is less than 95 percent. (P is greater than 0/05).

As can be seen in the above table, lack of the correlation of predictor variables is confirmed because the confidence value is less than 95 percent.

H0: The amount of overdue receivables has an effect on profit or loss in the Bank.

H1: The amount of overdue receivables does not have an effect on profit and loss in the Keshavarzi Bank.

### 4.4 Inferential findings

First hypothesis: the amount of overdue receivables has an impact on profit and loss in the Keshavarzi Bank.

Table 4: Regression model of the effect of overdue receivables on the profit and loss in the Keshavarzi Bank

Durbin-Watson	Adjusted determination (adj R2) coefficient	Determination (R2) coefficient	Correlation (R) coefficient	Variable
1/994	0/23	0/25	-0/5	Overdo receivables

As seen in the table 4, the amount of overdue receivables according to  $R^2 = 0/25$  are able to predict 25% of Keshavarzi bank profits and losses.

Table 5: variance analysis of the role of the overdue receivables in the bank profits and losses

p	F	Mean Square	Degree of freedom	Sum of squares	
0/001	186/448	7/019	1	7/019	Regression
		3/764	35	6/324	Residual
			36	1/334	Total

Analysis of variance showed that according to the value of  $F=186/448$  and  $P=0/001$ , amount of overdue receivables can significantly predict the Bank's profit and loss.(table5).

Table 6: the results of the prediction of the profit and loss in Keshavarzi bank through overdue receivables

p	t	Beta	Variable
0/245	1/167	-	Constant
0/001	13/655	-0/5	Overdue receivables

According to Table 6, the amount of overdue receivables has positive and meaningful relationship with the Bank's profit and loss due to the amount of  $Beta=0/5$ ,  $t=13/655$  and  $p=0/001$ .

H0: The amount of outstanding receivables has an impact on the profit and loss in the bank.

H1: The amount of outstanding receivables does not have an impact on the profit and loss in the bank.

The second hypothesis: the amount of outstanding receivables has an impact on profit and loss in the Bank.

Table 7: Regression model of the effect of outstanding receivables on the bank's profits and losses

Durbin-Watson	Adjusted determination (adj R2) coefficient	Determination (R2) coefficient	Correlation (R) coefficient	Variable
2/4	0/374	0/422	-0/649	Outstanding receivables

As seen in the table 7, due to  $R^2 = 0/422$  the amount of outstanding receivables is able to predict 42/2% of profits and losses of the bank.

Table 8: Analysis of variance of the role of outstanding receivables in the bank's profit and loss

p	F	Mean squares	Degree of freedom	Sum of squares	
0/01	8/755	71/542	1	572/336	Regression
		33/122	35	1357/984	Residual
			36	1930/32	Total

According to the amounts of  $F=8/755$  and  $p=0/01$ , outstanding receivables are significantly able to predict the profit and the loss

in the bank (table8).

Table 9: Results of predicting of the profit and loss in the bank through outstanding receivables

p	t	Beta	Variable
0/245	1/167	-	Constant
0/01	2/959	-0/649	Outstanding receivables

Given the amounts of  $Beta = 0/649$ ,  $t = 2/959$  and  $p = 0/01$ , outstanding receivables have a significant relationship with the profit and loss in the Bank (table9).

H0: The amount of collection of receivables has an impact on the profit and loss in the bank.

H1: The amount of the collection of receivables does not have an impact on the profit and loss in the bank.

The third hypothesis: the amount of the collection of receivables has an impact on profit and loss in the Bank.

Table 10: Regression model of the effect of the collection of receivables on the bank's profits and losses

Durbin-Watson	Adjusted determination (adj R2) coefficient	Determination (R2) coefficient	Correlation (R) coefficient	Variable
1/622	0/803	0/809	0/899	Collection of receivables

As seen in the table 10, due to  $R^2 = 0/809$  the amount of the collection of receivables is able to predict 80/9% of profits and losses of the bank.

Table 11: Analysis of variance of the role of the collection of receivables in the bank's profit and loss

p	F	Mean squares	Degree of freedom	Sum of squares	
0/001	52/126	23/713	1	23/713	Regression
		0/156	35	5/612	Residual
		-	36	29/325	Total

According to the amounts of  $F=52/126$  and  $p=0/001$ , the collection of receivables are significantly able to predict the profit and the loss in the bank (table11).

Table 12: Results of predicting of the profit and loss in the bank through the collection of the receivables

p	t	Beta	Variable
0/891	-3/236	-	Constant
0/001	12/334	0/899	Collection of receivables

Given the amounts of  $Beta = 0/889$ ,  $t = 12/334$  and  $p = 0/001$ , the collection of receivables have a significant relationship with the profit and loss in the Bank.

H0: The amount of doubtful receivables has an impact on the profit and loss in the bank.

H1: The amount of doubtful receivables does not have an impact on the profit and loss in the bank.

The forth hypothesis: the amount of doubtful receivables has an impact on profit and loss in the Bank (table12).

Table 13: Regression model of the effect of doubtful receivables on the bank's profits and losses

Durbin-Watson	Adjusted determination (adj R2) coefficient	Determination (R2) coefficient	Correlation (R) coefficient	Variable
2/336	0/51	0/512	-0/72	Doubtful receivables

As seen in the table 13, due to  $R^2 = 0/512$  the amount of the doubtful receivables is able to predict 51/2% of profits and losses of the bank.

Table 14: Analysis of variance of the role of the doubtful receivables in the bank's profit and loss

p	F	Mean squares	Degree of freedom	Sum of squares	
0/001	45/276	546/402	1	546/402	Regression
		0/847	35	32/177	Residual
		-	36	578/579	Total

According to the amounts of  $F=45/276$  and  $p=0/001$ , the doubtful receivables are significantly able to predict the profit and the loss in the bank (table14).

Table 15: Results of predicting of the profit and loss in the bank through the doubtful receivables

p	t	Beta	Variable
0/891	-0/138	-	Constant
0/001	25/402	-0/72	Doubtful receivables

Given the amounts of Beta =0/72, t =25/402 and p =0/001, the doubtful receivables have a significant relationship with the profit and loss in the Bank (table15).

H0: The collaterals of doubtful receivables have an impact on the profit and loss in the bank.

H1: The collaterals of doubtful receivables do not have an impact on the profit and loss in the bank.

The fifth hypothesis: the collaterals of doubtful receivables have an impact on profit and loss in the Bank.

Table 16: Regression model of the effect of the collaterals of doubtful receivables on the bank's profits and losses

Durbin-Watson	Adjusted determination (adj R2) coefficient	Determination (R2) coefficient	Correlation (R) coefficient	Variable
2/005	0/08	0/09	0/31	Doubtful receivables

As seen in the table 16, due to R2 =0/09 the collaterals of the doubtful receivables is able to predict 9% of profits and losses of the bank.

Table 17: Analysis of variance of the role of the collaterals of doubtful receivables in the bank's profit and loss

p	F	Mean squares	Degree of freedom	Sum of squares	
0/001	18/16	543/601	1	543/601	Regression
		2/968	35	83/101	Residual
			36	626/702	total

According to the amounts of F=18/16 and p=0/001, the collaterals of doubtful receivables are significantly able to predict the profit and the loss in the bank. (Table 17)

Table 18: Results of predicting of the profit and loss in the bank through the collaterals of doubtful receivables

p	t	Beta	Variable
0/261	0/362	-	Constant
0/001	13/534	0/31	Doubtful receivables

Given the amounts of Beta =0/31, t =13/534 and p =0/001, the collaterals of doubtful receivables have a significant relationship with the profit and loss in the Bank ( Table 18).

H0: The credit risk has an impact on the profit and loss in the bank.

H1: The credit risk does not have an impact on the profit and loss in the bank.

The main hypothesis: the credit risk has an impact on the profit and loss in the Keshavarzi Bank branches.

Table 19: Regression model of the effect of the credit risk on the bank's profits and losses

Durbin-Watson	adj ) Adjusted determination coefficient (R2)	Determination coefficient (R2)	Correlation (R) coefficient	Variable
1/56	0/143	0/357	0/597	Credit risk

As seen in the table 19, due to R2 =0/357 the credit risk is able to predict 35/7% of profits and losses of the bank.

Table 20: Analysis of variance of the role of the credit risk in the bank's profit and loss

p	F	Mean squares	Degree of freedom	Sum of squares	
0/001	3/665	175974248/4	1	175974248/4	Regression
		105686614/9	35	317059844/8	Residual
			36	493034093/2	Total

According to the amounts of F=3/665 and p=0/001, the credit risk is significantly able to predict the profit and the loss in the bank.( Table 20).

Table 21: Results of predicting of the profit and loss in the bank through the credit risk

p	t	Beta	Variable
0/24	-0/21	-	constant
0/001	8/29	0/597	Credit risk

Given the amounts of Beta =0/597, t =8/29 and p =0/001, the credit risk has a significant and positive relationship with the profit and loss in the Keshavarzi Bank.( Table 21).

## 5 The conclusions and recommendations

The First hypothesis: the amount of overdue receivables is effective on the profit and loss in the Keshavarzi Bank.

In the first hypothesis, the effect of overdue receivables on the profit and loss of the bank was investigated. Linear regression was used to test this hypothesis. The results of this test showed that the amount of overdue receivables are able to account for 25

percent of the bank's profits and losses. Paying overdue receivables organizes the banks for banking activities but not paying overdue receivables destroys the focus of activities and goals and thus banks will linger in their affairs. Kosmidou (2008) concluded that the increase in the risk of banks in paying facilities leads to the decrease in bank's profitability. In other words, bank risk in cases where there is possibility of not collecting receivables timely leads to lower profitability of banks. Kovasmido believes that banks can increase their profitability through control and effective monitoring of the credit risk.



The second hypothesis: the amount of outstanding receivables is effective on the profit and loss in the bank.

Regression test was used to investigate this effect. The results of this test showed that the amount of outstanding receivables account for 42% of the profit and loss. So, it is effective on the profit and loss. Outstanding receivables are among the indexes which reduces profit and leads credit institutions to the loss. Ghasemi (2010) also found that the phenomenon of outstanding receivables in bank assets requires creating reserves and this leads to the reduction of operating income and the volume of bank assets.

The third hypothesis: the collection of receivables is effective on the profit and loss in the Bank.

In the third hypothesis, the effect of the collection of receivables on the profit and loss of the bank was investigated. The results of the regression analysis showed that the debt collection is 80/9% effective on the profit and the loss. In accordance with what was said in the past, debt collection has dramatic effects on the Bank's profit and loss. If banks are able to have appropriate and timely financial commute, they will be able to do their activities well and more efficiently but late return of the resources to the banks causes problems for them and make them stay away from their intended targets and pay attention to the problems of not collecting the receivables; hence the collection of receivables has a positive effect on bank profits and losses. Pasiras (2008) found that studied and targeted credit risks will ensure the bank profits. Given this, banks need to act sensitively about credit risk and the possibility of debt collection.

The fourth hypothesis: the amount of doubtful receivables is effective on the profit and loss in the Keshavarzi bank.

Results of regression analysis showed the amount of doubtful receivables counts for 51/2 percent of the profit and loss of the Bank. In Iran, due to the difficult situation with which the industries (including agriculture) are grappling, it has its impact on the banking system and since the industries are not able to pay back their loans, the topic of receivables has become an issue in the banking system. (FallahShamsi, 1998)

The fifth hypothesis: collaterals of doubtful receivables are effective on the profit and the loss in the bank.

In the fifth hypothesis the effects of collaterals of doubtful receivables on the bank profits and losses were studied. The results showed that collaterals of doubtful receivables count for 9 percent of the profit and loss of the Bank. So, it is effective on the profit and the loss. According to the nature of the collaterals of doubtful receivables, they seem more collectable and are effective on the profit and loss of the Keshavarzi Bank but this interference is not too much and does not have a big role in determining profit and loss of the bank.

## 6 Conclusion

The aim of this study was to evaluate the effect of credit risk on the profit and loss in Keshavarzi bank. The risk is an irrefutable factor in economic activities. Lack of attention to the circumstances related to the amount of risk in economic and banking activities leads economic and banking institutions to the failure. Credit risk in Keshavarzi Bank is mostly under the influence of government policies to remove poverty and create food independence. Payments are done through the obligatory plans. However, this is done in the light of the banking system and banks should be able to observe the principles of banking and do payments carefully.

Outstanding facilities are the result of the wrong validation of borrowers, guarantors and actually taking the risk without considering the limitations of the bank capital and based on wrong performance indexes. Some banks settle outstanding and overdue debts of their customers with providing new facilities. This leads to false increase in the paid facilities which are considered as points for them and hides the performance and

accuracy of banks in paying facilities and leads to the negligence in paying loans timely and eventually covers up the real receivables of the bank. Adverse effects of the receivables on the banking system, economic system, credit system of banks, can disrupt the activities of banks especially in crisis (more than 5% of the remaining facilities) (GIO Report, 2007).

## 7 Recommendations

1. Since Keshavarzi Bank helps production and agriculture through facilities, it is proposed the bank to take into account Islamic contracts to improve the system of payments. So it can take into account the interests of the parties in payments and in participation in agricultural production and so it prevents paying inappropriate facilities. This must be done expertly and economically so payments with economic efficiency can take priority.
2. The results in this study suggest that credit risk indicators are effective on the profit and loss in Keshavarzi bank. Given the importance of credit risk, it is recommended that the Bank should take into account guaranteed procedures in repaying receivables. On this basis, taking office at the bank branches it can keep track of the collection of receivables.
3. Credit risk is one of the most important indicators of monetary and banking system that leads to the economic development. Accordingly, it is recommended to examine the factors affecting the credit risk of banks in future studies.
4. It is recommended to researchers and students who are interested in the study of the credit risk to take into consideration the variety of credit risk such as the level of the risk, type of warranties and so on in their research.

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**Primary Paper Section: A**

**Secondary Paper Section: AE**

## ATTRACTIVENESS OF REGIONS AND THE LEVEL OF BUSINESS OPTIMISM VIEWED BY SMALL ENTERPRISES

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**Abstract:** One of the important prerequisites for successful entrepreneurship is also the choice of an appropriate place of business. Our study analyses Czech regions in terms of their entrepreneurial attractiveness. Our questionnaire research collected 325 responses from entrepreneurs from the whole Czech Republic and looks into what the tendencies are in small companies moving between individual regions of the Czech Republic. We want to establish "What influences the decision of a company that is willing to change its registered office?", "Where do companies want to move to most often?" "Which Czech region features the highest level of business optimism in entrepreneurs?" and "Which region do entrepreneurs move out from most often?" The data analysis shows that Prague and Central Bohemia is the region which differs from other Czech regions in many ways: Prague and Central Bohemia is the region where most businessmen wish to move to; companies which have their registered office in Prague and Central Bohemia show the highest level of business optimism and Prague and Central Bohemia is the region companies most often leave.

**Keywords:** perception of regions, business optimism, attractiveness of regions.

### 1 Introduction

Entrepreneurs form an integral part of our economy. They create new jobs, can flexibly respond to the market situation, and contribute to economic growth. However, relatively small attention is paid to them in research. Crecente-Romero et al. (2016) emphasise that the demographic conditions of regions are determined by factors which make it easy to enter and set up businesses. They developed a classification system which allows the development of the perception of business opportunities to be analysed, but also specify cultural examples of entrepreneurship.

Entrepreneurship related to the regional pertinence of a businessman is dealt with by Bečicová and Blažek (2015). They looked into the financial market regional segmentation theory, which anticipates limits to credits available for small and medium-sized businesses having their registered office in peripheral regions. However, the results showed that entrepreneurs do not link discrimination by banks to their regional or peripheral place of business. The problem seems to lie rather in the assessment of their property (business premises). Property prices are generally higher in large agglomerations than in a periphery (in peripheral regions). Banks taking the value of a property as collateral provide a significantly lower assessment.

The willingness to start a business is shown by a considerable number of citizens. Latent entrepreneurship was established by, for example, Blanchflower, Oswald and Stutzer (2001). They concluded that a surprisingly large number of people in industrial countries state that they would prefer being self-employed. Poland (80% of respondents gave a positive answer) stand at the top of the imaginary ladder. A high level was also established in Portugal and the USA. Norway (with 27 % of respondents answering positively), Denmark and Russia came at the bottom of the table, on the other hand. The research also established that self-employed people enjoy significantly higher satisfaction with work than employed people.

Not everyone can start a business, though. The basic condition for starting a business is the willingness to take a risk. Kozubikova et al. (2015) examined the relationship between personality characteristics and the approach to the perception and management of business risks. The study results showed that entrepreneurs feature a high degree of self-confidence in considering their skills to manage financial risks as well as a high intensity of business optimism. The willingness

to take a risk is important, however, it has no influence on the later success or failure in doing business (Gartner & Liao, 2012).

There are also partial studies which analyse the conduct of entrepreneurs in emerging economies (Garcia-Cabrera, Garcia-Soto & Duran-Herrera, 2016). For example, they look into what influences small and medium-sized businesses in their decision-making about the possibility to be involved in international transactions and how important their motivation is.

However, there are no studies available looking into how businessmen perceive their region. In this respect, more attention was paid rather to residents of specific areas. For example, Bonaiuto et al. (1999) studied individual neighbourhoods in Rome and developed a model comprising four main areas: social relationships, architectonic and urban functions, network services and context functions. Coetier (1994) focuses rather on how people perceive the so-called "gaps in the landscape" (gaps are understood as textures of grass, land, water bodies, slopes, etc.). He says about perceiving the space that it is an integration of perceiving distance and size and is influenced by the prior expertise of the observer. The same author examined perception and assessment of the landscape a year later, and concluded that a great part of the population shared many identical opinions despite the varied landscape and these opinions can be further used for proposing uses of the landscape (Coetier (1996).

Debbage and Rees (1991) looked into how regions were perceived by entrepreneurs. They wanted to establish how companies based in different places perceive the comparative advantages following from their location. They questioned 160 businesses around Ohio, New York and Pennsylvania. They concluded that the closer to large industrial centres businesses are, the bigger the comparative advantage they appreciate. Similar conclusions were made by Han et al. (2016), who established that Shanghai residents living in the city centre think their quality of life is better. Similar studies focusing on an assessment of the region, city or neighbourhood were made by a number of authors (Llinares, Page & Llinares, 2013; Rahman, Mittelhammer & Wandschneider, 2011; Sanders & Canel, 2015 and others). We could further name many other studies looking into the issues of regions and locations regarding tourism (e.g. Zoderer et al. 2016), however, they do not pay much attention to the regional perception by entrepreneurs, which very often plays a crucial role in regions.

### 2 Methodology

The objective of our investigation was to identify how entrepreneurs (small businesses) perceive the region in which they do business and identify the factors which influence their real and potential migration within the Czech Republic. We also wanted to assess whether there are any links between the region and level of business optimism.

The selection group was created upon quota choice from the MERK database. The quota criteria were legal form (natural entity or a limited liability company), annual turnover above 1 million crowns (which excluded small traders) and up to 49 employees (which excluded medium-sized and large businesses). The location could be selected from the whole Czech Republic. Further, we selected only companies which showed stability or an increase (progress) in terms of their annual turnover and number of employees compared to the previous period. Businesses which showed a decline in one of the criteria compared to the prior period were excluded from the group.

We used an online interview technique complemented with telephone interviewing (CATI) to obtain information from all Czech regions. The total number of respondents in the selection group was 325.

MS Excel and the Gretl statistical package were used for statistical data processing. To study causal relationships between individual variables we used logit regression models. To select the resulting models the values of the most important criteria were taken into consideration. We monitored particularly the McFadden R-squared value, Akaike criterion and the number of cases correctly predicted by the logit model. For McFadden R-squared it applies that the higher its value, the more accurate the model is. On the other hand, for the Akaike criterion it applies that a lower value indicates a higher quality of the model. For the number of cases correctly predicted it applies that the higher the established percent is, the better. We took into consideration the p-value of the test when working with the model, which for individual explaining variables tests the hypothesis of null respective coefficients. If the p-value is smaller than 0.05, the hypothesis will be rejected and the specific regressor is considered significant. We created final models based on the above-stated procedure, which showed the best combination of values of the above-stated criteria. These models helped us answer the specified research questions.

### 3 Results

The place where an enterprise conducts business can significantly influence its future success (Crecente-Romero et al., 2016; Bečicová and Blažek, 2015). It is also apparent that moving a company is relatively demanding both in terms of funds, time and administration. Our objective was to identify factors (regressors) which have a statistically significant influence on the future move of a company to a different region from the one it is currently based in. We also wanted to find out if the level of business optimism depends on the specific region an enterprise is based in. Our third objective was to find out which region businessmen leave the most.

The division of regions used in the Czech Republic according to cohesion regions was applied for the statistical evaluation (see Fig. 1), which is used to compare territorial units within the European Union. Borders are identified according to the population within this division (NUTS II). The minimum number is 800 thousand and the maximum limit is 3 million people in one territorial unit. The capital city of Prague was merged with the Central Bohemian Region for our purposes. Even after this correction our adjusted segmentation complies with the basic conditions for comparability of territorial units. Prague and the Central Bohemian Region were merged because they represent a unified agglomeration in terms of business activities.

Fig. 1 Cohesion regions of the Czech Republic



Legend to Fig. 1: CZ 01 – Prague (the capital city of Prague), CZ 02 – Central Bohemia (Central Bohemian Region), CZ 03 – Southwest (South Bohemian and Plzeň Regions), CZ 04 Northwest (Ústí and Karlovy Vary Regions), CZ 05 – Northeast (Liberec, Hradec Králové and Pardubice Regions), CZ 06 – Southeast (Vysočina and South Moravian Regions), CZ 07 – Central Moravia (Olomouc and Zlín Regions), CZ 08 Moravia-Silesia (Moravian-Silesian Region)

### 3.1 Regressors which influence future moves of businesses

In the following basic logit model 1 we work with a dependent variable “ChangeFuture”. It shows if the company is willing to move its place of business in the future (1-Yes, 0-No). Details of the length of the company (how many years it has been on the market) were used as the basic regressors, as well as the fact whether it has ever moved its place of business in the past (ChangePast) and information on where the company’s current registered office is. The advantage of this regression model compared to individual statistical tests is the possibility to assess and compare the influence of more regressors. The model shows whether the influence of individual regressors is positive or negative.

Note to Fig. 2: The “n” index before the name of the region means that we work with the information within this model in which region the company has its current registered office (n=now). The individual explaining variables are then dummy variables which either get value 1 (if the company is based in that region) or 0 (if not).

Fig. 2 Basic logit model with a dependent variable “planned change of the company’s registered office” (ChangeFuture)

Model 1: Logit, using observations 1-325

Dependent variable: ChangeFuture

Standard errors based on Hessian

	Coefficient	Std. Error	z	p-value	
const	19.678	14614.9	0.0013	0.99893	
Age	-0.0197108	0.0169095	-1.1657	0.24375	
ChangePast	0.951899	0.475722	2.0010	0.04540	**
nPragueCentral Bohemia	-20.3614	14614.9	-0.0014	0.99889	
nSouthwest	-20.3408	14614.9	-0.0014	0.99889	
nNorthwest	-19.2143	14614.9	-0.0013	0.99895	
nNortheast	-20.205	14614.9	-0.0014	0.99890	
nSoutheast	-20.1555	14614.9	-0.0014	0.99890	
nCentralMoravia	-20.077	14614.9	-0.0014	0.99890	
nMoravia-Silesia	-19.1149	14614.9	-0.0013	0.99896	

Mean dependent var	0.400000	S.D. dependent var	0.490653
McFadden R-squared	0.062389	Adjusted R-squared	0.016671
Log-likelihood	-205.0825	Akaike criterion	430.1649
Schwarz criterion	468.0032	Hannan-Quinn	445.2662

Number of cases ‘correctly predicted’ = 210 (64.6%)

$f(\beta x)$  at mean of independent vars = 0.491

Likelihood ratio test: Chi-square(9) = 27.2927 [0.0013]

Source: Own processing

Model 2 was created from the above-stated basic model with respect to the established values of individual criteria (particularly the McFadden criteria value, Akaike criterion value, the value showing the ratio of “correctly predicted” cases and p-values) (Fig. 3). The final model shows the fact that the company has already changed its place of business in the past (p-value = 0.00765) is a significant regressor. Hence, if a business has changed its place of business in the past, it will more probably change it in the future as well. Further significant explaining variables are nNorthwest and nMoravia-Silesia. It obviously shows that businesses which have their current place of business in the Northwest Region (p-value = 0.00083), and Moravia-Silesia (p-value = 0.00968), tend to change the place of business more frequently. Because these regions show the highest unemployment rate in the Czech Republic, we can assume that the purchasing power of the population is for these businessmen a more important factor than, for example, the available work force. We would like to note here that the group only comprised entrepreneurs who employ a maximum of 49 employees, and, at the same time, we selected only entrepreneurs showing growth or stagnation compared to the prior period (as for turnover and number of employees). Entrepreneurs who showed a decline in any of the specified criteria were not selected for the group.

Fig. 3 Model 2 – Identification of important regressors – future company move

Model 2: Logit, using observations 1-325  
Dependent variable: ChangeFuture  
Standard errors based on Hessian

	Coefficient	Std. Error	z	p-value	
const	-0.782356	0.144308	-5.4214	<0.00001	***
ChangePast	1.17976	0.442339	2.6671	0.00765	***
nNorthwest	1.0081	0.301664	3.3418	0.00083	***
nMoravia-Silesia	1.08389	0.418953	2.5872	0.00968	***

Mean dependent var	0.400000	S.D. dependent var	0.490653
McFadden R-squared	0.050829	Adjusted R-squared	0.032541
Log-likelihood	-207.6111	Akaike criterion	423.2222
Schwarz criterion	438.3575	Hannan-Quinn	429.2627

Number of cases 'correctly predicted' = 212 (65.2%)

$f(\beta x)$  at mean of independent vars = 0.491

Likelihood ratio test: Chi-square(3) = 22.2354 [0.0001]

Source: Own processing

We asked the respondents who stated they would like to change the place of business in the future to tell us where they would like to move to and why. Entrepreneurs from all regions (outside Prague and the Central Bohemian Region) would most often like to move to Prague. The reasons could be divided into several categories: 1. they expect greater anonymity and less frequent inspections by authorities ("most companies would like to move to Prague. Tax audits are sporadic there. However, they are quite frequent and extremely severe." - a respondent from the Zlín Region. "There are fewer businesses in the Karlovy Vary Region, which means more frequent inspections carried out by public authorities. We have audits carried out by the Czech Agriculture and Food Inspection Authority every year, they visit my competitor in Prague once every 5 years. There is a smaller likelihood of economic terror" - a respondent from the Karlovy Vary Region. "The best place is Prague, people are happy when somebody does something. If you pay more than 0 on tax deductions, you are a hero." - a respondent from the Moravian-Silesian Region, "There are fewer inspections in Prague, i.e., also less time loss. If it was the same everywhere, I would not change anything" - a respondent from the Vysočina Region). This category of responses was the most frequent. The second category of responses is designated as better business opportunities ("Prague is better for business, however, not for quality of life", "bigger market" - both respondents from the South Bohemian Region, "Prague - more clients with better earnings" - a respondent from the Karlovy Vary Region, "Prague, bigger business opportunities.", "Because purchasing power is lower here compared to other regions." - both respondents from the Moravian-Silesian Region, "Better contact with main business partners." - a respondent from the Olomouc Region). The third category "Other" is created only by individual incentives or rather wishes ("The possibility of narrower specialisation, more stable working hours, higher income" - a respondent from the Moravian-Silesian Region, "If I could, I would like to do business in the country, where a handshake means a real commitment and honesty is not just an empty word." - a respondent from the Zlín Region. On the other hand, statements concerning why the businessmen did not want to move occurred only uniquely ("I cannot see the reason for change, the law and rules are valid in the whole Czech Republic, everything is only about people" - a respondent from the Hradec Králové Region).

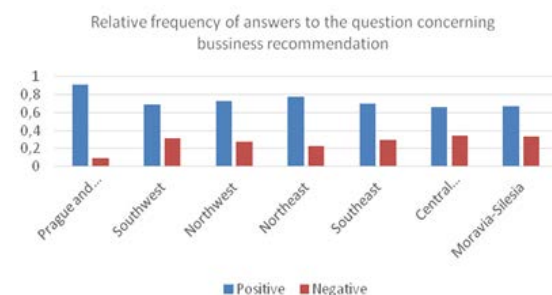
Even the free responses show that businessmen (small companies) are more bothered by low purchasing power than the availability of work force. If we asked medium-sized and particularly large businesses, the responses would probably be different.

### 3.2 Level of business optimism

A further part of our research focused on so-called business optimism. We asked the above-stated group of entrepreneurs whether they would recommend entrepreneurship to young people. Entrepreneurs used a 4-grade scale to answer (1-

definitely yes, 2-rather yes, 3-rather not, 4-definitely not). We will consider a positive recommendation as a specific level of business optimism. In the regression analysis we used the original data, i.e., all four types of answers were taken into consideration, however, for the graphic presentation (Fig. 4) we joined two positive and two negative responses. Fig. 4 shows that the highest level of business optimism (i.e., the most frequent recommendation to young people to start doing business), is in the Prague and Central Bohemian Region. The situation in Moravia, both in the regions of Central Moravia and Moravia-Silesia, is different, however.

Fig. 4 Recommendations of entrepreneurs to young people to start up business (relative frequency)



Source: own processing

To confirm the specified descriptive data statistically, we developed a model logit as well. The basic model in this case applies the explained "proxy" variable of the "recommendation to start up business". The age and the current place of business of the company were used as regressors. The "n" index before the name of the region means that we work with the information within this model, in which region the company has its current registered office (n=now).

Fig. 5 Basic logit model with the explained variable (explained variable) Recommendation to do business

Model 3: Ordered Logit, using observations 1-325  
Dependent variable: BussinessRecommendation  
Standard errors based on Hessian

	Coefficient	Std. Error	z	p-value	
Age	-0.0127885	0.0147256	-0.8685	0.38515	
nPrague Central Bohemia	-2.25155	1.0538	-2.1366	0.03263	**
nSouthwest	-1.37001	1.03527	-1.3233	0.18572	
nNorthwest	-1.52937	1.03206	-1.4819	0.13838	
nNortheast	-1.4928	1.02368	-1.4583	0.14477	
nSoutheast	-1.1387	1.05433	-1.0800	0.28013	
nCentral Moravia	-1.39846	1.03868	-1.3464	0.17818	
nMoravia-Silesia	-1.16506	1.06484	-1.0941	0.27390	
cut1	-2.91623	1.03915	-2.8063	0.00501	***
cut2	-0.62942	1.02792	-0.6123	0.54032	
cut3	1.68695	1.04792	1.6098	0.10744	
Mean dependent var	2.089231	S.D. dependent var	0.774621		
Log-likelihood	-365.9645	Akaike criterion	753.9289		
Schwarz criterion	795.5510	Hannan-Quinn	770.5403		

Number of cases 'correctly predicted' = 165 (50.8%)

Likelihood ratio test: Chi-square(8) = 84.7238 [0.0000]

Source: Own resources

We were looking for the best final model using the above-stated basic logit model. With the progressive elimination of regressors we took into consideration both the respective p-values and the McFadden criterion values, the Akaike criterion value as well as the value specifying the ratio of "correctly predicted" cases. The final model is presented in Fig. 6. The significant regressor here is only a dummy variable showing whether the company has its registered office in the Prague and Central Bohemian Region. The negative value of the coefficient (-0.862487) in this case means that respondents from this region more frequently selected answers with a low value (i.e. definitely yes and rather yes). So, we can say that entrepreneurs from the Prague and

Central Bohemian Regions feature a statistically higher level of business optimism. The already mentioned study (Gartner & Liao, 2012) focused on the importance and meaning of the level of business optimism.

The Prague Region is presumably a more favourable environment for entrepreneurs which offers them more opportunities. However, there are entrepreneurs in Prague who are thinking of moving their place of business out of the region. The analysis of their answers shows they have different reasons than entrepreneurs who wish to move to Prague. One of the respondents is willing to move the place of business to the Zlín Region ("Zlín Region, we will move out in a few weeks. We have a new production shop in Slavkov, so there is no point in keeping the registered office in Prague."). Another respondent gives the following reason for why he wishes to leave Prague: "Opportunities to develop and reduce unemployment." A third respondent said he wanted to move because of "The quality of the transport infrastructure, which should be better in the Czech Republic. Prague is isolated - there is a poor connection to Ústí, Brno, České Budějovice and other regions."

Fig. 6 Model of identification of business optimism regressors

Model 4: Ordered Logit, using observations 1-325

Dependent variable: BusinessRecommendation

Standard errors based on Hessian

	Coefficient	Std. Error	z	p-value	
nPrague Central Bohemia	-0.862487	0.340736	-2.5312	0.01137	**
cut1	-1.3692	0.143057	-9.5710	<0.00001	***
cut2	0.897981	0.127921	7.0198	<0.00001	***
cut3	3.19843	0.295109	10.8381	<0.00001	***

Mean dependent var	2.089231	S.D. dependent var	0.774621
Log-likelihood	-367.9236	Akaike criterion	743.8473
Schwarz criterion	758.9826	Hannan-Quinn	749.8878

Number of cases 'correctly predicted' = 164 (50.5%)

Likelihood ratio test: Chi-square(1) = 80.8054 [0.0000]

Source: Own processing

### 3.3 Regions entrepreneurs most often leave

Our last objective was to identify which regions are most frequently left by entrepreneurs. We developed a table at first, which shows absolute value related to the number of companies which have already changed their place of business for another region in the past (see Fig. 7).

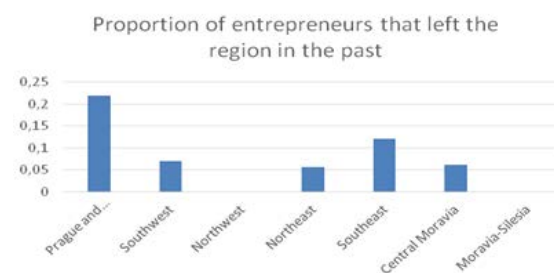
Fig. 7 Entrepreneurs who have moved their company's registered office to a different region

	Change Past	pRegion	Ratio
Prague and Central Bohemia	7	32	0,219
Southwest	4	57	0,07
Northwest	0	55	0
Northeast	4	70	0,057
Southeast	4	33	0,121
Central Moravia	3	49	0,061
Moravia-Silesia	0	21	0
summary	22	317	

Source: Own processing

We created a graph based on the specified data, which shows the ratio of entrepreneurs who moved out from individual regions. Fig. 8 shows that the highest number of entrepreneurs left the Prague and Central Bohemian Region. On the hand, this number is the lowest for the Northwest and Moravia-Silesia Regions. None of the interviewed respondents left the specified regions. This is a very surprising finding. Accordingly, we wanted to verify statistically the established descriptive data in this case as well.

Fig. 8 Rate of entrepreneurs who left their original registered office



Source: Own processing

We created the basic model logit at first, with all basic regressors. In this case, it was the year the enterprise started a business (start-up) and then a dummy variable for every region, showing whether the company had its place of business in the specific region in the past – when it started business. The "p" index was selected for all names of the regions because it designates the past (p=past). The dependent variable in this model is the change in the place of business in the past (ChangePast). We excluded the Northwest and Moravia-Silesia Regions since no one moved out.

Note: the p index before the name of the region means where the company had its registered office before moving.

Fig. 9 Basic logit model to establish which region companies leave most often

Model 5: Logit, using observations 1-325 (n = 245)

Missing or incomplete observations dropped: 80

Dependent variable: ChangePast

Standard errors based on Hessian

	Coefficient	Std. Error	z	p-value	
const	19.6637	10086.1	0.0019	0.99844	
Start	-0.0187974	0.0320818	-0.5859	0.55793	
pPrague Central Bohemia	-20.9057	10086.1	-0.0021	0.99835	
pSouthwest	-22.0691	10086.1	-0.0022	0.99825	
pNortheast	-22.016	10086.1	-0.0022	0.99826	
pSoutheast	-21.3919	10086.1	-0.0021	0.99831	
pCentral Moravia	-22.1273	10086.1	-0.0022	0.99825	

Mean dependent var	0.102041	S.D. dependent var	0.303322
McFadden R-squared	0.116785	Adjusted R-squared	0.030085
Log-likelihood	-71.30928	Akaike criterion	156.6186
Schwarz criterion	181.1274	Hannan-Quinn	166.4882

Number of cases 'correctly predicted' = 223 (91.0%)

f(beta'x) at mean of independent vars = 0.303

Likelihood ratio test: Chi-square(6) = 18.8581 [0.0044]

Source: Own processing

We further worked with this basic model in a standard way, i.e., by eliminating regressors, and we took into consideration important criteria values and p-values. Taking into account all the specified values, we created the final model the outputs of which are shown in Fig. 10.

Fig. 10 Model identifying regions from which entrepreneurs most often move

Model 6: Logit, using observations 1-325

Dependent variable: ChangePast

Standard errors based on Hessian

	Coefficient	Std. Error	z	p-value	
const	-2.66869	0.237237	-11.2491	<0.00001	***
pPrague Centr.Bohemia	1.20235	0.511282	2.3516	0.01869	**

Mean dependent var	0.076923	S.D. dependent var	0.266880
McFadden R-squared	0.026606	Adjusted R-squared	0.003914
Log-likelihood	-85.79161	Akaike criterion	175.5832
Schwarz criterion	183.1509	Hannan-Quinn	178.6035

Number of cases 'correctly predicted' = 300 (92.3%)

f(beta'x) at mean of independent vars = 0.267



*Likelihood ratio test: Chi-square(1) = 4.68986 [0.0303]*

*Source: own processing*

The results confirm that the region showing a statistically significant value of moving away from is Prague and Central Bohemia (p-value = 0.01869). Hence, the statistical calculation confirmed what the descriptive analysis indicated.

The fact that the Prague and Central Bohemian Regions appears to be significant with a positive influence is very interesting. It means that businesses in Prague and Central Bohemia move to different regions statistically more than businesses from other regions. This suggests that the entrepreneurial environment is highly competitive for small businesses in Prague and Central Bohemia and it is complicated to establish oneself in Prague.

The open question of why respondents left Prague and Central Bohemia was answered by 4 of them. They gave the following reasons: "studying", "purchase of property and moving to own premises", "wife's job" and "change in residence". Although the reasons can look like "family-related issues" at first sight, it cannot be excluded that the decisive factor could have been the fact they expected to do better in a different region. If their business in Prague or Central Bohemia had been more successful, they would probably have stayed in Prague.

#### 4 Discussion

Entrepreneurs are considered to be the driving power behind business growth (Ribeiro-Soriano and Mas-Verdú, 2015; Forsman, 2011 et. al.). They are thought to be more creative, flexible and innovative compared to medium-sized businesses and corporations (Cheng and Krumwiede, 2012; De Jong and Marsili, 2006; Nassimbeni, 2001). Therefore, we can anticipate they will be able to actively respond to an environment limiting growth of their further business. We collected very interesting and surprising information from our enquiry. Some regions which are generally considered problematic due to a higher unemployment rate, lower purchasing power, lower educational structure of the population and a number of other indices (such as the Northwest or Moravian-Silesia regions) at the same time feature a lower level of business optimism. On the other hand, entrepreneurs remain in these regions and do not tend to move elsewhere. Only one respondent from the Karlovy Vary Region (i.e., the Northwest Region) stated that they were planning to move the company to Germany due to the shortage of work force.

Entrepreneurs who would like to move to Prague have core business in a variety of activities (transport and freight forwarding, e-commerce, IT, tourism, electrical engineering, CNC machining, accommodation and catering services, trade, services, property, sale and transportation of construction materials, telecommunications and brewing, and a number of others). Our group did not show a specific branch focus of the businesses which think they would do better in Prague. The same applies to entrepreneurs who are currently based in Prague or Central Bohemia and are interested in moving to another region. They also feature a wide range of business activities (machinery production, stationer's, IT and others).

Prague and Central Bohemia is the region where companies want to move to the most. At the same time, it is the region most often left by companies, as we have established. The third finding is that businesses remaining here feature the highest level of business optimism. These three findings may look paradoxical at first sight. However, we suggest the following clarification:

Many businesses can see a number of business opportunities in Prague and Central Bohemia. That is why they would like to move there. However, after setting up their business they are confronted with high competition typical of the region as well as high prices in all areas of entrepreneurial activities, including personal life. High competition and high costs in the region is the reason why many businesses have to leave Prague and Central Bohemia. Nevertheless, businesses which can establish

themselves can thrive on the high purchasing power in the region and many opportunities offered by the region. Hence, the high level of business optimism shown by them.

#### 5 Conclusion

We focused on three basic objectives in our research. Firstly, we wanted to identify which factors play the largest role in the future movement of businesses to a different region. Using a specific logit model, we established that the largest role is played by the fact whether the company has already moved in the past, and which region the company is currently based in. The Northwest and Moravia-Silesia proved to be statistically significant in this respect. Entrepreneurs from these regions show more frequent intention to move their business to a different region – particularly Prague and Central Bohemia.

We also wanted to find out if the level of business optimism depends on the specific region in which an enterprise is based. The level of business optimism was derived from whether entrepreneurs would recommend starting a business to young people. We anticipate that successful entrepreneurs having successful companies will more often recommend doing business unlike those afraid of the future of their companies, who would be rather pessimistic. In this case, the descriptive data already showed that the level of business optimism is highest in the Prague and Central Bohemia region. Using regression analysis, we confirmed that the observation proved to be statistically valid and significant.

The third objective was to identify the factors influencing the movement of companies to a different region. For this case, we first used the outputs of descriptive statistics, and verified them using the logit model. The region from which entrepreneurs move out statistically the most is Prague and Central Bohemia.

Hence, the data analysis shows that Prague and Central Bohemia is very attractive for many entrepreneurs. The fact (observed and verified statistically) is that many enterprises leave the region as well. This is presumably due to being confronted with tough competition and high costs. On the other hand, the enterprises which manage to establish themselves here can take advantage of the high potential of the region and are doing well. This is proved by a high level of business optimism.

Our research collected a lot of interesting information. Although we tried to answer qualitative consequences in the specific area at least partly (for example, looking for reasons why businesses moved out, or why they are willing to move in the future and what their expectations from the change are), these questions would deserve further and more detailed examination focused on this.

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#### Primary Paper Section: A

#### Secondary Paper Section: AE, AH



## THE COMPETITIVENESS OF SLOVAK PRODUCTS MANUFACTURING COMPANIES IN FOREIGN TRADE

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**Abstract:** Certificates are presented to customers as form of marketing or as an excuse to increase product price. Consumer approach or focus on customer are considered some of main principles of quality management, based on which management itself should be established.

The aim of this article is to highlight the need and application of certification in foreign trade of production businesses, on bases of questionnaire survey and statistical verification, as a condition for certification ownership in export.

**Keywords:** *intangible capital, innovation, innovation potential*

### 1 Introduction

What drives business to certification and implementation of quality management system? It could be said, it is mainly better understanding of the business externally in relation to environment. Many groups are involved in this environment such as state, competition, suppliers, consumers as well as customers. However, customer measures product quality other way rather than by certificates. In other words, ordinary customer is not interested and does not know whether company, he is purchasing from, have products made in a process that is aligned with certified system of quality management. In the end, customer does not even know whether the product is constructed from different opponents, supplied by different companies, which may or may not possess this certificate. Certificates are externally presented to customers as form of marketing or an excuse to increase product price. Customer approach or focus on customer are considered some of main principles of quality management, based on which management itself should be established. Companies produce to sell their products to customers, therefore, in the end customer decides whether the product is of a good quality and if it meets customer's needs. Producer learns the above mentioned only from customer experience, which proves quality and reliability of product. Hence, consumer approaches towards quality definition are variant. In case customer does not perceive product as a quality one, it does not have to mean product really is not of good quality, or that it does not have certified system of quality management. It means the company does not produce in accordance with customer requirements or that these requirements were not successfully transferred into product and they should attempt for rectification of these facts. There is a trend in companies to have certified system of quality management. "According to official site of ISO this system was implemented by more than million companies and organisations in more than 170 countries around the world."

### 2 Literature review

Beginnings of development of industrial production and deeper perception of quality go back to 19. -20. century. On the turn of these two centuries, the new element appeared which had a strong impact on quality development. This period was significant for productivity rise and new organisation of production process, that means decomposition of the whole

production process to simpler operations that could be performed by unqualified workers. This system lied in an ability of a person to improve results and at the same time decrease of occurrence of mistakes and increase their performance. „Author“ of this system was F. W. Taylor and it was introduced by first american automobile company Ford. Currently, effort to build customer approach to quality that reflects success of product on a market. The second world war accelerated implementation of new knowledge into practice. It emerged as a need of mass armament production. There was firstly mentioned establishment of quality departments in telecommunication sphere when seeking faults and their causes. Currently, securing quality is connected to names such as G. D. Edwards, W. A. Shewart, who took part on securing quality via statistical methods e.g. regulation diagram, correlation and regress analysis.<sup>1</sup>

These statistical methods and tools have become base for successful application of mathematical statistics in sphere of quality. First publication regarding quality was published in 1945 under the name Quality like a management, where author A. V. Feigenbaum described experience with quality development and application of complex quality management TQC (Total Quality Control). It has become the first „qualitator“.<sup>2</sup>

Quality of processes in production and following quality of products is currently a very important factor in business. It is not only base for success on a market, but is also important carrier of the entire business prosperity, because quality especially can assure economically effective sale of products on current markets with very strong competitive ability.

Quality has a dominant position also on foreign markets. Apart from that it is important to consider also the boom of international corporations which could be competed with only spectacularly high level of quality production. In analyses of relation of quality and success on foreign markets it is necessary to respect international norms of quality, certification quality criteria and various other regulations, that regulate quality in individual countries.

For better understanding of quality, which is often perceived as a factor to secure success of business, it is necessary to define the term quality. Nowadays, quality has become an important business pillar for economic development of many businesses. Price of products and services is defined by quality as well as their durability and functionality. It all has an impact on the overall satisfaction of customers and consumers.

„In business sphere the term quality is understood as set of characteristics and attributes of products which determine level (degree) of their ability to fulfil required functions, for both customer as well as producer. Quality, therefore, expresses agreement with determined requirements.“

„According to the norm STN EN ISO 9000:2001 Systems of quality management (Norm ISO 9000 is a methodical norm describing use of all norms within the file. It deals with three fields: unification of terminology if field of securing quality, regulation definition where norms are applied, norm ISO 9000 defines application of other ISO norms).“

„Japanese industrial norms define quality as set of corresponding characteristics and attributes which are subject of appraisal aimed at determination whether the product or service are suitable for its purpose or not. Data, based on which quality of a product

<sup>1</sup> Kaynak, H.: *Total Quality Management and Just-in-Time Purchasing: Their Effects on Performance of Firms Operating in the U.S.* 1st Edition. Abingdon: Routledge, 1998. 342 p. ISBN 978-0815330486.

<sup>2</sup> Feigenbaum, A. V.: *Total quality control*. 4th Edition. New York: McGraw-Hill Companies, 1991. 896 p. ISBN 9780070203549.

is determined are derived from characteristically features of the product.“

Foreign publications claim that definition of quality is in hands of every company. Every organisation must develop its own politics and in a certain moment create definition of what quality and TQM - Total Quality Management means to the certain organisation. Basically it is business philosophy of management acknowledging needs of customers and business objectives are inseparable. This philosophy is applied in industry as well as business.<sup>3</sup>

„Survive economically nowadays may only the company which will sell products satisfying customer, in way of utility values, quality and corresponding price. Everything is considered to be of good quality, that means quality products, quality services, quality work and technology. This all is maintained by a certain system of factors ( the main is the market of products and jobs, the others are organisation of pre-production phase, production phase, post- production phase, system of quality management, etc).“

Foreign authors J. MacDonald and J. Piggott introduced new approach to quality definition and that is pleasing customer. According to them: Quality is defined as "pleasing customer by continual improvement and satisfying their needs."<sup>4</sup> In this approach authors point out two issues. The first issue, connected to realisation of importance in company to plan the whole process, in order to encourage people and actively partake on product improvement and feel responsible for everything happening in the company. The second issue is broadening of the term quality by additional and accompanying services.

Several recent studies focus on the impact of ISO 9001 quality management standards. Using a sample of 163 Spanish manufacturing firms for the period 1996-2000, perform a rare events log it and a regression analysis and discover that the ISO certification and ownership structure positively impact firms performance.<sup>5,6</sup>

The growth of labor productivity is absolutely necessary for reducing poverty rates, for increasing the quality of public services and for improving living standard.<sup>7,8</sup>

The role of quality certification standards cannot be neglected in enhancing business performance, offering a framework for cost saving, for improvement of customers satisfaction, and favouring the companies access to new markets. Although the importance of quality certification has long been recognised, its impact on the productivity growth has seldom been examined, with few exceptions.

Several studies investigated the impact of quality standards adoption on the firms performance, with an accent on financial results.<sup>9,10,11,12</sup>

Other studies focused on the role of quality certification on the labor productivity, assessing the role of environmental standards,<sup>13</sup> safety standards<sup>14</sup> or quality management standards.<sup>15</sup> Firms which adopt quality management schemes ISO 9001 improve their performance due to the fact that they will continually monitor and manage quality across all operations. In this light, firms better meet customers needs, cut errors, motivate and engage staff to increase the efficiency of internal processes, placing the quality in the centre of their business.<sup>16</sup>

### 3 Methodology and data

The aim of this article is to highlight the need and application of certification in foreign trade of production businesses, on bases of questionnaire survey and statistical verification, as a condition for certification ownership in export. The variables in the statistical verification were slight research and development in companies. Of the 80 respondents from manufacturing companies in the survey 31 companies, representing a 38.75% response rate. The survey was conducted using a combination of random companies.

Hypothesis: in-between variables – Share of products designated for export abroad and – Share of products, possessing certificate of quality, there is statistically important dependance with reliability 0,90 or on level of importance 0,1 ( on 0,05 it is not statistically important anymore) As the coefficient correlation is positive (0,3446) there is medium strong direct linear relation between variables: The more companies posses certificate of product quality, the more they try to export abroad.

Table 1: Values of correlation coefficients and p-values of statistically important dependancies between individual couples of variables

Pearson Correlation Coefficients, N = 28 Prob >  r  under H0: Rho=0		
	share of products designated for export in %	share of products with quality certificate in %
share of products designated for export abroad in %	1.00000	0.34456
		0.0726
share of products with quality certificate in %	0.34456	
	0.0726	1.00000

Source: own processing

Average value of share of products designated for export abroad is 53,123%, standard deviation, that shows to what extent are individual measured values around medium value is 36,998%. The minimal share of products designated for export abroad is 0% and the maximal share of products designated for export abroad is 100%. Medium value (median) of share of products designated for export abroad that divides statistical files into two same parts from point of countability is 62,500%. The most commonly appearing share of products designated for export abroad is 90%.

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<sup>12</sup> Ullah B., Wei, Z., Xie, F.: *ISO certification, financial constraints, and firm performance in Latin American and Caribbean countries*. In Global Finance Journal. ISSN 1044-0283, 2014, vol. 25, pp 209-228.

<sup>13</sup> Garcia-Pozo, A., Sanchez-Ollero, J. L., Marchante Mera, A.: *Environmental good Practices, Quality Certifications an Productivity in the Andalusian Hotel Sector*. In International Journal of Environmental Research. ISSN 17356865, 2014, vol. 8, no. 4, pp. 1185-1194.

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<sup>15</sup> Ilkay, M.S., Aslan, E.: *The effect of the ISO 9001 quality management system on the performance of SMEs*. In International Journal of Quality and Reliability Management. ISSN 0265-671X, 2012, vol. 29, pp 753-778.

<sup>16</sup> Albulescu, C.T., Draghici, A., Fistis, G.M. and Trusculescu, A.: *Does ISO 9001 quality certification influence labor productivity in EU-27?* In Procedia - Social and Behavioral Sciences. ISSN 1877-0428, 2016, vol. 221, pp. 278-286.

Average value of share of products possessing certificate of quality is 87,178%, standard deviation, that shows to what extent are individual measured values around medium value is 22,679%. The minimal share of products that have certificate of quality is 15% and the maximal is 100%. The most commonly appearing share of products with certificate of quality is 100%. The medium value (median) of share of products with certificate of quality is 100%.

Table 2: Statistical functions - average value, standard deviation, minimum, maximum, modus, median hypothesis

Variable	Mean	Std Dev	Minimum	Maximum	Mode	Median
share of products designated for export abroad in %	53,12	36,99	0	100	90	62,5
share of products with quality certificate in %	87,17	22,68	15,00	100	100	100

Source: own processing

#### 4 Data analysis

Nowadays, if company aspires to effectively compete and establish itself on challenging markets nationally and abroad, it must assure for its products high level of quality and in long term to maintain and improve it. This could be achieved with international certification of quality.

„Certification is determined as an activity of subject independent on product and consumer, its aim is to objectively assess whether the product, but mainly, the whole system of quality creation is to meet specified requirements and if they are in accordance.“

The objective of the company is for companies to own as many certificates of quality as possible. Certification is base for application of uniqueness model EFQM, which is starting point for company to enter competition for National price of SR in quality. The most common certificates companies posses are:

- System of quality management. Requirements (ISO 9001: 2008) – represents european standard and is accepted in other countries;
- ISO TS 16949 Systems of quality management. Individual requirements for norm application ISO 9001: 2000 in automobile producing companies and their replacement parts was cancelled and is replaced by norm STN P ISO/TS 16949:2009-12 (01 0311);
- ISO 14001 Systems of environmental management. Requirements with instructions how to apply them (ISO 14001: 2004);
- OHSAS 18001- Systems for management of safety and protection of health at work. Requirements.

Companies have built certified and maintainable system of quality management in accordance with ISO 9001, it means that all the products of the company are produced in accordance with this norm, de facto they have a certificate of quality according to this norm. In our opinion, certification system contributes to increasing employee education level. Certification requires re training employees in order for them to know requirements of producing quality products, process course contributing towards quality development and subsequently could contribute with their ideas to improve production process and working conditions. Product certification can work as a motivational tool for employees and contribute to loyalty increase of employees towards the company. Employees, that contribute with their work to production of quality products and increase of healthy lifestyle of public may feel responsibility for their work as well as towards the company, where they work.

Slovak export depends directly or indirectly on exporting to surrounding countries from Germany. Slovak export is narrow

and is dependant on number of industries. Slovakia exports to EU countries almost 85 % of its production. The main source of growth of Slovak economy is automobile industry and electrotechnical industry.

They are leaders in export that carries economy, while national consumption stagnates. The extreme is that almost equal amount of respondents stating export of exported products is 0% - 20%. Slovak companies might be divided into two groups, companies who export almost the entire production and companies, that do not export at all or just a little percentage of their products. The smallest share products designated for export abroad was claimed by food processing industry and construction industry. Implications of credit crunch were demonstrated in public and activities connected to export. Demand for products stagnated or grew very slowly resulting in decreased profits and savings of financial means. Reaction to failure of business results are savings, that can be carried out faster than market starts itself. Demand recovers much slower. Share of exported products is influenced by number of elements such as crises in eurozone, low demand, legislation changes, boarded politics, risk on market of suppliers and consumers, taxation system in a country. Companies invested less financial means into individual activities such as product innovation and innovation development. Export is a driving force of Slovak economy and as well as household spendings but in smaller scale. „In November 2013, export reached 6 090,3 mil. Eur at the rate 4,6 %. Total export of goods was increased by 4,8 % to 5 776,4 mil. Eur. Balance of international sales was active in amount of 314 mil. Eur (which was higher by 0,5 mil. Eur compare to November 2012).“

„In eleven months of 2013 in comparison with the same period in 2012 the total export has increased by 3.4 % to 59 755,6 mil. EUR and total import by 1,5 % to 55 175,3 mil. Eur (by 1 104,6 mil. Eur more for the same period in 2012).“

Survey question regarding share of products designated for export was statistically verified based on given hypothesis in connection with product certification in the company.

#### 5 Results and discussion

Analyses of survey led us to conclusion that share of products designated for export abroad is in scale from 61 % to 80% or from 81 % to 100 %. Slovak companies export almost entire production abroad. Industries representing the biggest share of exported products are automobile industry, information technologies and electrotechnical industry. Their share of exported products represent 70% - 100%. Slovakia is dependant on foreign demand.

The biggest share of products that are result of certified system of quality production represent 91% -100% out of asked companies. Another group consisted of companies that register 81% - 90% certified products emerging from certified system of quality product management. Approximately the same number of investigated companies in comparison with companies owning quality certificate of products 81% - 90% register certified quality products in share lower than 50%. Third largest group consists of companies possessing 71% - 80% of certified products. The lowest share of products with certificate of quality represents companies in share 61% - 70%.

We can establish based on sample of investigated companies that slovak production companies devote increased attention to certification of quality and general quality management of products as well as the whole transformation process. Product and process certification means prestige for companies these days. Currently, certification in companies is considered to be a process inevitable and implied. It is an important aspect for company presentation, company and product image improvement, increased share of export, better appraisal of production and cost savings for trials. The higher the share of certified products company owns the more customers consider products as of high quality. Certificate serves as "quality

assurance" and is the key for remedying higher price level product. After successful certification, companies automatically increase price of their products and services. Customer often treats sales with accordance to a motto: "you pay for the quality". Currently, in these times of more and more cases regarding harmful foods, customer is willing to pay higher price for quality product believing it has quality guaranteed by certificate. Food processing industry fights against harmful, low quality, imported foods in form of marking goods "mark of quality", "Quality from our region". This way they try to eliminate use and import of low quality foods and support production and demand for slovak products.

## 6 Conclusions

The most famous and most commonly used international norm for quality certificate is quality certificate according to ISO 9001:2008. This norm involves 8 Chapters Company is obliged to apply in case it wants to be holder of this ISO certificate. Holder of stated certificate may increase its competitive ability on a market because ISO 9001:2008 specifies requirements on quality management system for organisation. Organisation must demonstrate its ability to perpetually provide product that meets every customer requirement, requirements of laws and regulations. ISO 9001:2008 also aims to increase customer satisfaction due to effective application of processes for continual improvement of system and assuring agreement with customer requirements. Requirements of norm ISO 9001:2008 are general and must be used for every company regardless of type or size of a company.

In order to be commercially successful product and service quality is insufficient, it is necessary to assure professional attitude of other parallel activities, out of which are the most important marketing activities. Their main aim is to acquire customers and consumers.

Currently, apart from competitiveness of company certificates increase image of company. For customers and company it is so called resulting document proving production process quality of quality products. We can establish that by creating common European market companies have large space for import and export of their products, however, one of the main conditions is disposal of quality certificate. Noted statement was examined within framework of the research of production companies in Slovakia. Results of research point out real use and need of standards for quality certification in business practice.

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**Primary Paper Section: A**

**Secondary Paper Section: E, H**

# APPLYING THE FLOW-OF-FUNDS FRAMEWORK FOR THE ANALYSIS OF MACRO-FINANCIAL LINKAGES AND MONEY CREATION

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**Abstract:** In this paper we apply the flow-of-funds framework for the analysis of macro-financial linkages. We analyse the macroeconomic mechanism of the creation of purchasing power through credit, the link between credit and money creation, the partial self-financing property of bank credit, as well as similarities and differences between bank credit and other sources of financing. Bank credit flows directly support domestic demand and can at times be the single most potent, yet typically grossly underrated, demand-side driver behind the dynamics of economic activity and prices. In this paper we show that bank credit directly adds to domestic demand, which translates into some combination of stronger domestic economic activity, stronger foreign economic activity and higher prices.

**Keywords:** flow-of-funds, macro-financial linkages, national accounts, money creation.

## 1 Introduction

The recent global financial crisis caught mainstream economists by a surprise, exposing serious gaps in the collective understanding of crucial elements of the interaction between the real economy and the financial system. With only a handful of exceptions, the mainstream macroeconomic models regard bank credit as a means to redistribute existing real savings (or purchasing power), whereas in fact, by issuing loans, banks create new purchasing power. Investment spending is not actually predicated upon the consumption versus saving choice of an optimising agent but can instead be supported by bank credit and the cost of the dilution of the existing purchasing power may be borne by unsuspecting agents. There are signs of ongoing tectonic shifts in economic thinking with the world's most authoritative financial institutions voicing concerns about the current "debt-fueled growth model" and effectively calling for a theoretical and policy paradigm shift (BIS, 2016).

In this paper we get back to the basics in the pursuit to understand the fundamental linkages between financial and real sides of an economic system. Advances in national accounting frameworks and the associated analytical tools, compilation of more detailed financial accounts and constantly improving statistical compatibility between economic and financial accounts allows us to usefully apply the flow-of-funds (FOF) framework for the analysis of macro-financial linkages. We look into stylised cases of economic and financial transactions to analyse the macroeconomic mechanism of the creation of purchasing power through credit, the link between credit and money creation, the partial self-financing property of bank credit, as well as similarities and differences between bank credit and other sources of financing.

The remainder of this paper is structured as follows. In Section 2 we provide a short introduction to the analytical FOF framework and present economic and accounting principles behind it. In Section 3 we analyse macroeconomic identities and accounting constraints. Finally, in Section 4 we apply the FOF analysis tools to analyse bank credit as a means to create purchasing power.

## 2 General principles of the macroeconomic accounting

The system of national accounts (SNA) is an internationally compatible accounting framework providing a detailed description of national economies, their real and financial components and the economic relationships between institutional sectors. One of the main sets of tables in the SNA framework is the institutional sector accounts. In this accounting representation, a national economy is comprised of institutional sectors, namely, nonfinancial corporations, financial

corporations, general government, households and non-profit institutions serving households (NPISH). There is also "the rest of the world" (ROW) sector, which enables recording economic interactions between the national economy and non-residents.

The institutional sector accounts are organised around the sequence of accounts, which records each sector's economic and financial activities in a compatible way. More specifically, the sequence of accounts provides a comprehensive sequential description of the cycle of sector's economic activity by linking its resources (revenue), uses (expenditure), accumulation of financial and nonfinancial assets and the associated changes in the sectoral balance sheet positions. The use of similar classifications and accounting rules allows symmetrical reporting of transactions or changes in asset positions for interacting institutional sectors. The unified accounting framework also ensures the aggregation of sectoral accounts data into economy-wide aggregates, which are at the heart of the macroeconomic analysis.

Integrated economic accounts form the basis of the flow-of-funds tables and the associated sectoral balance sheet position tables. These analytical tools prove very useful for diagnosing the short-term state of an economy and are routinely applied by organisations like the International Monetary Fund in country assessment programs. They allow monitoring and assessment of economic imbalances (Be Duc and Le Breton, 2009), facilitate the analysis of macro-financial linkages (Crowe, Johnson, Ostry and Zettelmeyer, 2010), real and financial network formation (Castren and Kavonius, 2009; Castren and Rancan, 2013) and shadow-bank activity (OECD, 2016), as well as help to better understand the role of money and credit in the economy.

An analytical FOF table offers a quick and straightforward way to portray an economy as a closed system consisting of interacting institutional sectors. A FOF table shows revenue, expenditure and financing transactions of each sector and the national economy, as well as the interactions with the rest of the world. The economic variables typically are highly aggregated, there is no breakdown into uses and resources unlike in the "T-account" representation, and changes in assets and liabilities are often reported on the net change basis. Thus, to obtain more detailed information it might be necessary to refer to the tables of integrated economic accounts or other related sources of statistical information. The main advantage of the succinct FOF representation is that it makes immediately clear which sectors have deficits, why they have them, from which sectors they finance excess spending and by which financial instruments. The system is closed in the sense that in the absence of statistical errors there should be no unaccounted sources of financing, thus such accounting framework can be very helpful in ensuring internal consistency of the macroeconomic analysis.

## 3 Macroeconomic identities and accounting constraints

Constraints in the FOF framework stem from some principal macroeconomic accounting identities. First, private institutional sector's disposable income equals the primary income net of taxes plus net social benefits and other current transfers. In contrast to the private sector, the major part of general government's disposable income comes from taxes. In national disposable income calculations, the income that constitutes other domestic institutional sectors' expenditure (for example, taxes, rents, etc.) is netted out. Thus, gross national disposable income (GNDI) is the sum of gross domestic product (GDP), external primary income (PI) and external secondary income (SI).

$$\text{GNDI} = \text{GDP} + \text{PI} + \text{SI} \quad (1)$$

National saving is defined as the difference between GNDI and final consumption expenditure (C; and again, national saving is the sum of government and private sector saving (S)):

$$S = \text{GNDI} - C \quad (2)$$

By substituting equation (1) into (2), using the GDP decomposition by expenditure approach and applying the balance-of-payments (BOP) definition of the current account balance, one gets another well-known macroeconomic identity, which states that the saving-investment (I) balance of the national economy must equal the external current account (CA) balance:

$$S - I = CA \quad (3)$$

By adding capital transfers to both sides of equation (3) and abstracting from statistical errors, we can immediately see why net lending (NL) of the aggregate economy should equal net borrowing of the ROW sector in the FOF:

$$\text{GNDI} - C - I + KA = NL = FA = CA + KA \quad (4)$$

where, FA = financial account balance and KA = capital account balance.

The recent global financial crisis, which was characterised, among other things, by disrupted capital flows among key economic sectors, highlighted the need to understand the financial interconnectedness between sectors but such analysis was hampered by the lack of adequate data (Shrestha and Mink, 2011; Shrestha, Mink, and Fassler, 2012). Therefore, in recent years more and more countries are starting to compile and publish financial accounts data on the so-called who-to-whom basis. This representation contains large amounts of data and is difficult to compile for economies with advanced financial markets, thus the progress in this field is rather slow. However, the economic importance of such data is immense because it ensures internal consistency of integrated economic accounts framework.

When financial accounts data are available in both instrument and who-to-whom decomposition, the FOF can be easily tailored to specific analytical needs. We can combine elements of both decompositions and break sectoral net financing (NF) into two broad sources of funding, namely, foreign (FF) and domestic financing (DF). For example, in the case of the nonfinancial corporations sector (subscript C) this gives:

$$\text{NFC} = -\text{NLC} = \text{FFC} + \text{DFC} \quad (5)$$

If nonfinancial corporations sector has a negative net lending ( $\text{NLC} < 0$ ), this implies that the sector has a positive net financing need ( $\text{NFC} = -\text{NLC} > 0$ ) and it funds its excess spending by acquiring financing either from abroad or from other domestic sectors ( $\text{FFC} + \text{DFC} > 0$ ). It is also noteworthy that at the aggregate economy level the flows of financing among domestic sectors are netted out ( $\text{DF} = 0$ ) making net financing of the total economy equal net foreign financing:

$$\text{NF} = -\text{NL} = \text{FF} \quad (6)$$

Comparing equations (5) and (6) we see that while excess spending of an institutional sector can be funded by attracting financial resources from other sectors or from abroad, a rise in the national excess spending can only be associated with financing from abroad. It is tempting to assert that domestic financing, for example in the form of bank credit, cannot stimulate spending. But it would be mistaken because, under certain circumstances domestic financing – and bank credit in particular – can stimulate both national spending and income resulting in a small or even no financing gap for the national economy.

#### 4 Bank credit as a mean to create purchasing power

Bank credit is crucial in the process of creating money and new purchasing power. The view that bank credit technically creates deposits and not vice versa is also known in the financial literature as “financing through money creation” (FMC) and it

strongly contrasts with the “old” and technically flawed “intermediation of loanable funds” (ILF) view (see Jakob and Kumhof, 2015, for a comparative analysis). Incidentally, the fact that bank credit technically creates deposits is indisputable and is widely acknowledged in the central banking and financial community (McLeay, Radia and Thomas, 2014) and even in introductory textbooks on money and banking but the modern mainstream models almost universally embrace the old ILF view of banks.

Though the FMC view is undoubtedly correct from financial accounting standpoint, one cannot accept it unconditionally from the macroeconomic perspective. Even though banks can issue new credit at will, they still need to be sure that they will have enough liquidity (e.g. reserves with the central bank) in the case of withdrawals or transfers of newly created and old deposits. Thus banks’ willingness to grant new loans depends not only on profitability considerations but also on their liquidity situation and, by extension, on their deposit base (because deposits create liquidity in the form of bank reserves at the central bank). Nowadays, ample and cheap liquidity available from central banks downplays the importance of liquidity considerations and diminishes the importance of deposits in determining banks’ willingness to extend new credit.

The FMC paradigm has very important and nontrivial macroeconomic implications. It suggests that bank credit can provide a powerful boost to domestic purchasing power even in the absence of the access to foreign funding (see equation 6). Banks’ inherent ability to create purchasing power at will, with only relatively mild limitations, implies that nominal levels of investment and consumption expenditure are much less dependent on individual saving decisions than is conventionally maintained in the standard macroeconomic theory. Simply put, saving may lead to investment in the absence of banks (e.g. through peer-to-peer lending) but credit-financed investment leads to rises in nonfinancial surpluses and deposits, which can even be loosely interpreted as newly created “savings”.

Without a proper analysis of the financial side of the economic system, one would still observe the saving and spending processes that balance each other but nevertheless it is very likely that the drivers behind these decisions would be misinterpreted. Let take an example of household taking a mortgage to buy a new house from a developer (corporation). The household sector is the net borrower and the nonfinancial corporate sector has a nonfinancial surplus of exactly the same magnitude that is needed to finance the housing acquisition. So looking at the snapshot of the economy after the transactions have taken place and concentrating on the nonfinancial part of the economy, one could conclude something along this line: strong income growth of the nonfinancial corporations sector and withheld corporate investments led to a rise in corporate savings which were channeled to the household sector and bolstered its housing acquisition. But in fact this would be a completely incorrect interpretation of what actually happened. We know that this simple case was devised in such a way that households were willing to acquire housing, while the bank took the decision to grant credit and was arguably the most important economic actor in this regard. Banks’ ability to issue credit was not predicated upon any of the sectors’ willingness to save.

This example clearly shows that the loanable funds paradigm portraying banks as functionally passive financial intermediaries between savers and borrowers is incorrect: banks have a much larger role than merely facilitating the process of reallocation of existing real resources. Also, the ILF view incorrectly regards depositors as savers and “attributes to them an influence on the “supply of credit” which they do not have” (Schumpeter, 2016). The reallocation of resources eventually happens as a consequence of bank lending but by issuing loans the banking sector first and foremost enables systemic balance sheet expansion or, in other words, an increase in the financial leverage at the aggregate economy level. By issuing loans, banks create new nominal purchasing power, which leads to a demand-driven rise in economic activity (domestically or abroad) and

changes in various price levels (in particular, consumer and producer prices, financial asset and property prices, wages, and exchange rates), which in turn dilute the real purchasing power to a certain degree.

To further clarify economic implications of credit creation and to distinguish it from other forms of expenditure financing, it is useful to reconsider the above-discussed financing case in terms of the equation of exchange.

$$M \cdot V = P \cdot Q \quad (7)$$

where,  $M$  = broad money;  $V$  = velocity of money;  $P$  = prices level;  $Q$  = real output.

In the case of sectoral spending funded by current savings there are no immediate changes in any of the components of the equation of exchange (7). When a sector draws down its financial assets or borrows from other domestic nonfinancial sectors, nominal output ( $P \cdot Q$ ) rises but  $M$  in the economy remains unchanged leading to an increase in  $V$ . Even though we do not explicitly examine the dynamic implications of the initial expenditure and financing transactions, it is reasonable to think that such an increase in  $V$  would quickly subside as, figuratively, economic agents, or a sector as a whole, would quickly find limits to tapping into their bank accounts.

In contrast, bank credit helps to overcome these limitations because, as was mentioned above, it expands nominal purchasing power rather than redistributes it. Bank credit induces an increase in  $M$  and a commensurate rise in  $P \cdot Q$ , leaving  $V$  roughly stable. After the initial increase in  $M$  it is likely to decline only gradually as bank loans are repaid, thus the demand-side stimulus related to bank credit (and, more generally, to money creation) is likely more persistent than a stimulus related to an increase in the  $V$  associated with drawing down sectoral assets. Notably, the impact of bank credit on the equation of exchange is not unique – borrowing from abroad creates qualitatively similar effects. Domestic bank credit differs from borrowing from abroad in that the latter leads to the accumulation of foreign debt and a flow of cross-border interest payments.

## 5 Conclusions

In this paper we applied the FOF framework for the analysis of macro-financial linkages. The FOF framework represents the economy as a closed system of economic and financial flows among institutional sectors, which is ideally suited for tracking the origination and macroeconomic impact of credit and money flows. The FOF framework helps identify bank credit as one of the means of expenditure financing, i.e. by running down net financial assets, as opposed to restraining other spending.

Money and purchasing power creation is an indispensable corollary of bank credit issuance, which implies that the “financing through money creation” paradigm does a much better job in explaining the actual mechanics of bank credit creation than the “loanable funds” model. Credit is not predicated upon existing savings but rather creates new savings and is therefore to some extent self-financing. However, credit is not necessarily fully self-financing because, in simple terms, money can flow out of the banking system leaving banks exposed to financing gaps. Financing through money creation has huge macroeconomic implications: bank credit directly adds to domestic demand, which translates into some combination of stronger domestic economic activity, stronger foreign economic activity and higher prices – with particular configuration depending on the structural features of the economy.

Moreover there are macroprudential implications of credit-driven growth as it may result in a systemic over-reliance on continuous debt accumulation. Beside the partial self-financing feature of credit, one of the most remarkable aspects of credit expansion is the large capacity of economies to absorb new credit. The self-propelling and overextended credit booms may

result in a situation where economic agents are unwilling or unable to take up additional credit and further expand their balance sheets, which naturally leads to a reversal of credit flows and invokes the “aggregate debt repayment phase” and the associated balance sheet recession. The policy makers’ standard response seems to have been to resort to debt (or asset price) reflation strategies by trying to reignite private sector credit growth or replacing it with growing public debt. The long-term implications of these strategies applied in response to the recent global financial crisis are still largely unclear.

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## Primary Paper Section: A

## Secondary Paper Section: AH

# THE RELATION OF PERSONAL CHARACTERISTICS AND BRAIN DIMORPHISM OF WOMEN TO MASCULINE/FEMININE MEN FACE PREFERENCE

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**Abstract:** The possible connection among women personality traits, their masculinity (measured by the ratio 2D:4D), and preference of masculine/feminine male's face image is explored on the research sample of 288 women (M=21.23y, SD=6.135). Personality Inventory KUD has been used to assess their personality traits: dominance/submissiveness, rationality/sensuality, and extraversion/introversion. Results have shown that there is a connection among the personality traits, 2D:4D and preference of men's face. More masculine women prefer masculine male face. The more feminine is a female, the more are her personality traits accentuated, the less straightforward is her preference of the man's face type. Women who are neither feminine nor masculine prefer feminine male face.

**Keywords:** Face attractiveness, Personality traits, Masculinity, 2D:4D, Female choice.

## 1 Introduction

The face plays a crucial role in social cognition and behavior, therefore an answer to the question what women prefer while making a decision about attractive men faces has come to the center of attention in several researches. An interconnection between certain personal characteristics and facial traits can be found, since stable personality traits have the potential to be reflected in specific facial traits. For example, faces high in symmetry which are primarily received as more attractive, and healthy, are as well perceived as having positive personality attributes. It could be assumed, that women make their choices by estimation of men's personal characteristics, which might be based on the image of physical beauty.

The process behind attractiveness evaluation has been proven to have biochemical base, as is known, watching a beautiful face activates brain reward centers<sup>1, 2</sup>, and through the mechanism of reward centers enhancement, attractive faces could motivate sexual behavior, and the establishment of friendships/same-sex alliances.<sup>3</sup> In general, attractive people are seen in a positive light for a wide range of attributes compared to unattractive people. This sort of stable perception associated with physical attractiveness has been described as "what is beautiful is good" stereotype.<sup>4</sup> Similarly, as was confirmed in a meta-analytical study<sup>5</sup> people describe individuals with beautiful faces along positive lines.

Attractiveness of a face depends on certain components as averageness<sup>6</sup>, symmetry<sup>7, 8</sup>, sexual dimorphism<sup>9</sup>, skin quality<sup>10</sup>, a

pleasant expression, good grooming<sup>11</sup>, youthfulness<sup>12</sup>, and, for known faces, attractiveness can reflect nonphysical characteristics, such as how much one likes the person.<sup>13</sup> The most sexually selected preferences on a face are<sup>14</sup>: 1. preference for proximity to a spatially average face, i.e. averageness; 2. preference for bilateral symmetry, and 3. preference for feminine traits in female faces and masculine traits in male faces. From psychological point of view, an important cross-cultural confirmed conclusion suggests that personality traits are (by both sexes) reported as to be one of the most important factors in partner choice<sup>15, 16</sup>. Therefore, personality attributions elicited by a face could impact on its attractiveness, thus, it may be that the personality attributions are driving the attractiveness judgments.<sup>17</sup> Based on the fact that women find as desirable what they consider good, and they perceive faces with desired traits attractive, it has been hypothesized that facial attractiveness reflects "what is good is beautiful" reversing the causal logic of "what is beautiful is good".<sup>18</sup> Moreover, regardless of the potential inaccuracy of personality attributions, many individuals do believe the face is an important source of information about one's character.<sup>19</sup> People differ in their preferences for personality in partners, therefore personality inferences about a face may influence that face's attractiveness.<sup>20</sup>

This paper is oriented on masculinity/femininity understood as one of the universally attractive traits.<sup>21</sup> The attractiveness evaluation of a female face towards femininity is rather straightforward, the more is a woman's face feminine the more attractive she is considered.<sup>22, 23</sup> On the other hand the preference for masculine/feminine male face is not as straightforward as expected. Although some studies have confirmed that there is a clear preference for more masculine male faces<sup>24</sup>, other research has shown some exceptions where feminized male faces were found more attractive.<sup>25, 26</sup> Additionally, facial masculinity can be assessed by women as possessing higher social status rather than physical attraction.<sup>27</sup> More masculine men are considered

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healthier<sup>28</sup>, and at the same time these men are characteristic by negatively perceived personality traits as lower honesty and lower warmth.<sup>29</sup> Very attractive male faces possess a combination of both masculine and feminine features, and therefore reflect 'multiple motives' in a woman's choice of partner, i.e. the desire for a dominant and a cooperative partner.<sup>30</sup>

Several researches have explored the cyclic shifts in women's attraction to masculine traits in a men's during the menstrual cycle<sup>31, 32</sup>, and it was suggested, that women are more interested in "good genes" in the fertile phase, and more interested in social advantages (e.g. a cooperative partner) when they are in the luteal phase of the menstrual cycle. Further, some studies have found a connection between the evaluation of male face and situational factors as is the presence of a stable relationship, pursuing a long-term or a short-term relationship<sup>33</sup>, or usage of oral contraception.<sup>34</sup> However, as far as we know, an empirical arena devoted to attractiveness research did not bring almost any findings exceeding the question of mutual interaction among women personality traits, their masculinity (measured by the ratio 2D:4D), and preference of masculine/feminine male's face image. This research is focused on the question how stable characteristics of women shape the process of male's face attractiveness evaluation.

## 2 Method

The participants filled out a battery of questionnaires and performance tasks among which they had to evaluate the attractiveness of a male face according to his masculinity / femininity. To explore our research question these variables have been processed:

**Sex** - Participants were asked to choose from two categories of sex. This research analyses only women.

**Attractiveness of masculinity/femininity of faces** - The face composites<sup>35</sup> were used for face attractiveness assessment based on masculinity/femininity perception. Two male composites manipulated in facial masculinity and femininity in compliance with face features corresponding with high masculinity and femininity in faces have been used. Women, who evaluated the faces according to their attractiveness were blind to the fact that faces represent two different levels of masculinity/femininity. Women were asked to answer the question: "Which face do you like more?" The task was to choose from two possibilities: a face with masculine traits or a face with feminine traits. Face composites are shown at the figure 1.

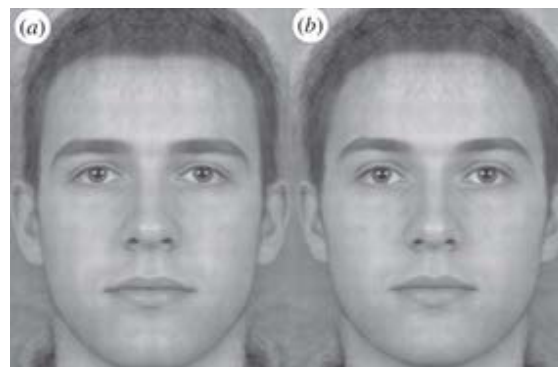


Figure 1: Face composites manipulated in facial masculinity and femininity. Face marked a) refers to masculinized face, b) refers to feminized face<sup>36</sup>

**Personality traits** - Personality Inventory KUD was used for quick assessment of personality traits which could be presumably related to a face preference. These personality traits are included: dominance/submissiveness, rationality/sensuality, and extroversion/introversion. Each trait is represented by 8 items, with these possible answers: agree/disagree/neither. Sample items: "I'm calm even if I decide about something that I really care about", "Generally, I act upon a predetermined schedule".

**Brain dimorphism** - 2D:4D represents the length of the second finger divided by the length of the fourth finger. This ratio substitutes for the measurement of the amount of prenatal androgens exposure.<sup>37</sup> The high prenatal levels of androgens refer to low values of 2D:4D and therefore to a more masculine brain development and high values of 2D:4D refer to a more feminine brain development. In general, the 2D:4D ratio represents the amount of masculinization of the brain, it allows to measure the amount of masculinity/femininity of a person on a scale. These values enables to assign the subject into the right value of brain masculinization regardless the visible biological sex (male vs. female).<sup>38</sup> 2D:4D has been measured as the length from the midpoint of bottom crease to the tip of the fingers on both hands.

Research sample consists of 288 women. The mean age is 21.23 years (SD=6.135). The average value of 2D:4D measured on the right hand has gained 0.995 (SD=0.041) and the average value gained on the left hand is 0.997 (SD=0.046). Any participant engaged in the research after oral consent.

## 3 Results

In order to examine the possible typology of women linking the decision about the attractiveness of male faces and women personality traits and their 2D:4D ratio, cluster analysis has been executed. Non-hierarchical cluster analysis (two step cluster analysis) was used due to the fact that a categorical variable (masculine/feminine male face preference) as well as continuous variables (personality traits: dominance/submissiveness, rationality/sensuality, and extraversion/introversion, and 2D:4D ratio) has been used in the analysis.

The results have shown that there is a connection among the personality traits, 2D:4D and preference of man's face. The cluster analysis has manifested three main clusters (Table 1). The first cluster is characteristic by the most frequent category inside the cluster which is the masculine male face, represented

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by 117 participants (99.1% of the same choice in one category). These women manifest the lowest values of 2D:4D, thus having a more masculine brain than other groups. The second cluster has manifested both possible choices of preference, slightly more frequented category inside the cluster is the preference of masculine male face (58.3%). This group is the most feminine group among all three clusters ( $M_{Left2D:4D}=1.02$  and  $M_{Right2D:4D}=1.02$ ). As may be visible, the more feminine is a female, and the more are her personality traits accentuated, the less straightforward is her preference of the man's face type. The third cluster consists of 120 women. According to 2D:4D ratio, this cluster in the middle of the three groups, in comparison to the other groups it could be said that women who are neither feminine nor masculine prefer feminine male face.

Table 1. Cluster analysis results: Clusters of female personality traits, the 2D:4D ratio, and preferences of the male faces

	Cluster 1	Cluster 2	Cluster 3
Size	117 (42.9%)	36 (13.2%)	120 (44.0%)
Male face preference	Masculine male face (99.1%)	Masculine/Feminine male face (58.3%/41.7%)	Feminine male face preference (100.0%)
Introversion	4.40	13.42	4.32
Dominance	7.80	13.72	8.37
Sensuality	6.52	12.86	7.88
Rationality	9.57	13.03	8.84
Right 2D:4D	0.99	1.02	1.00
Submissiveness	10.33	12.06	10.55
Left 2D:4D	0.99	1.02	1.00
Extraversion	11.19	12.50	11.78

We have analyzed the variance of the personality traits, and 2D:4D ratio of women according to the three clusters (Table 2) in order to examine further the potential differences among groups of females in compliance with those preferences. In concordance with cluster analysis results, all constructs have manifested as significant in the differences among groups of women with the exception of extraversion, which appears as the least important personality trait in the cluster analysis as well.

Table 2. One way analysis of variance results: Comparison of clusters of female in personality traits and the 2D:4D ratio

	Cluster	N	M	F	p
Dominance	1	117	7.80	45.762	.000
	2	36	13.72		
	3	120	8.37		
Submissiveness	1	117	10.33	4.331	.014
	2	36	12.06		
	3	120	10.55		
Sensuality	1	117	6.52	41.980	.000
	2	36	12.86		
	3	120	7.88		
Rationality	1	117	9.57	21.462	.000
	2	36	13.03		
	3	120	8.84		
Extraversion	1	117	11.19	2.597	.076
	2	36	12.50		
	3	120	11.78		
Introversion	1	117	4.40	104.085	.000
	2	36	13.42		
	3	120	4.32		
Right 2D:4D	1	117	0.99	7.518	.001
	2	36	1.02		
	3	120	1.00		
Left 2D:4D	1	117	0.99	4.318	.014
	2	36	1.02		
	3	120	1.00		

#### 4 Discussion

In general, according to multiple motives model of male attractiveness, prevalent male face preference is a face with the presumed features of sexual maturity, dominance, sociability, approachability, and high social status.<sup>39</sup> Since the motives of desired partner's personality can be combined, the relationship between attractiveness and presumed male's dominance may be somewhat unclear, some authors find mentioned relationship<sup>40 41</sup>,

and others don't.<sup>42</sup> As was found out in the current study, the situation mirrors presumed multiple motives model since masculine male face is preferred only slightly more (50.3%) than feminine male face (49.3%). The presence of differences among women in their preference of masculinity shows us that women don't generally have an identical idea of an attractive man. This finding leads to an assumption that there might be factors influencing the process of evaluation apart from general manifestation of a beautiful face.

One from the contemplated factors influencing the face's image attractiveness might be personality attributions elicited by a face<sup>43</sup>, personality of the potential partner is more important in the process of making a choice to women than men.<sup>44</sup> Simultaneously, desired personality is important in terms of real mate choice and people prefer partners with similar personalities.<sup>45</sup> If the evaluation of men faces attractiveness is based on the presumed personality of men, and women tend to prefer partners with similar personalities, it might be important to examine if the personality traits of women can influence this attractiveness evaluation of men faces. Surprisingly, very little research has investigated whether personality traits of women has a relationship with the evaluation of men faces attractiveness based on their presumed personality. Our results have provided evidence that not only desired personality influences perceptions of facial attractiveness in male faces<sup>46</sup>, but in addition, that women differ in the decision about the attractiveness of male faces depending on their own personality traits, thus, personality traits of women play a role in face attractiveness evaluation based on presumed personality trait of the evaluated face.

Individuals are choosing partners who physically resemble themselves or partners who appear to have similar personalities to themselves.<sup>47</sup> The evidence for this assumption is not very clear as it is possible, that established couples aren't similar looking, they rather become more physically alike over time due to sharing similar diets, lifestyles and emotional experiences.<sup>48</sup> On the other hand, the most straightforward evidence for assumption of resemblance searching in potential partners in our research is the relationship between presumed masculinity from a man's face image and the enhanced (in comparison to other groups) masculinity of the judges. As the women are characteristic by lower values of 2D:4D, which suggests a more masculine brain development. It might be that the evaluation of a masculine male's face attractiveness is conducted in compliance with own masculinity of the females just because there is a possibility of personalities resemblances. A research supporting the importance of personality traits between partners provided evidence that partners tend to mate assortative for agreeableness, conscientiousness and openness to experience.<sup>49</sup> The preferences for similar personalities may be reflected in face preferences. The fact, that personality is assumed from faces is documented<sup>50</sup>, these assumptions may not be accurate, but the desire for a partner with similar personality traits has the potential to affect attractiveness evaluation. As it seems, the preference for a partner based on

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similar personality traits could lead to facial similarity in partners in terms of apparent personality.<sup>51</sup>

An interesting result has been provided on the other side of fingers length difference. The most feminine women are characteristic by accentuated personality traits more than by a specific face preference. This group of women don't judge any face prevalingly more than the other type of male face. Slightly more frequented category is a masculine male face, but it isn't a straightforward preference. The group of women is rather typical by higher introversion, dominance, submissiveness, rationality and sensuality. It can be assumed, the more a female's personality traits are accentuated, the less straightforward is her preference of the man's face type. The last cluster stands according to 2D:4D ratio in the middle of the three groups. When comparing this women to the other groups it could be said that women who are neither feminine nor masculine prefer feminine male faces. Since, we have found out that masculinity in women is attracted to masculinity in male's face, we can assume that women who are not as much masculine may prefer less masculine men.

Women's assumption that faces provide important guides to personality<sup>52</sup> may lead them to make partner choices based on facial appearances that appear to be in line with desired personality traits of the partner or own personality traits or the 2D:4D ratio. Further research is needed as the results are rather multifaceted.

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<sup>51</sup> Little, A. C., Burt, D. M., & Perrett, D. I.: *What is good is beautiful: Face preference reflects desired personality*. Personality and Individual Differences, 41, 1107–1118, 2006.

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### Primary Paper Section: A

### Secondary Paper Section: AN

# STATUTORY BODY AND THE MANAGEMENT OF THE BUSINESS COMPANY

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**Abstract:** The authors focus on the topic of the position and the liability of the companies' statutory bodies in relation to the current trends of the legal science and judiciary. The article is specifically dedicated to the doctrine of business judgment rule that is connected with the evaluation of an admissible risk that is borne by the statutory body when adopting the right and proper decision and the management of the company and also when adopting the decisions on behalf of the company's business plans. The authors also deal with the analysis and the comparison of this institute in other legal orders such as the orders of the United States of America, the Czech republic and the Slovak republic.

**Keywords:** statutory body, risk capacity, performance of an office, business judgment rule, discretionary power of the statutory body.

## 1 Introduction

The topic of the position, rights and duties and mostly the questions related to the liability of the statutory bodies of the business companies is one of the mostly frequented topics of the business law and is addressed by many legal practitioners as well as by many legal scholars. The reason for that is the fact that the statutory body (or its members) plays the fundamental role in relation to the operation of the business company, mostly to the economic results and income incurred by the company. We assume that the abovementioned is probably the main reason why the European as well as world legal orders examine these issues. As for the fact that this topic is rather wide we focus on the research of the basic aspects of the liability of the statutory body with regards to the new approaches in this area. Such new approaches try to come up with the trends what would balance the duties of the statutory body and its liability so that strict imposing of the liability of the statutory body was not harsh and endless and did not lead to the situations when the statutory bodies will lack any will to adopt risky decisions necessary for the operation of the business company. Such risky decisions might play the decisive role when seeking for the innovative solution of the day-to-day situations related to the operation of the business company and to the competitiveness of the company.

## 2 Duties of the statutory body

When defining the liability of the statutory body the terms like reasonable care, due care and professional care are used by the legal scholars and legal practitioners. On the one hand these terms are crucial when reviewing the conditions for imposing the liability against the statutory body of the company. On the other hand the identification of the content of such terms is left for the legal scholars and mostly for the decision making of the courts. The general character of these terms is not the subject matter of this article but we consider it very important to analyze these terms and to bring the added value thereto. Such analysis is necessary for the needs of legal practice, moreover due to the fact that there is a huge debate on this topic recently and there are many legal opinions related to these terms. We assume that the lack of precise and strict definition of these terms shall not be viewed as the mistake or the inconsistency of the legislator. We are of the opinion that strict legal definition would bring the exact terms to the topic of the liability of the statutory body but such definition would probably not affect all the spectrum of the statutory body's actions.<sup>1</sup>

Recently there are the rather negative ideas related to the statutory bodies of the company mostly in the context of

tightening of the director's liability and imposing the claims against these persons. The reasons for such ideas are caused by the fact that the person of the statutory body has the decisive impact on the business of the company and the fact that the person of the statutory body profits the most from the company's business activities in the eyes of the shareholders. These persons play the role also in the situation when the company fails to meet the targets stipulated by the shareholders of the company.

In this matter the institute of „golden parachutes“ is mentioned. Such institute represents the situation when certain amount of money representing the „severance pay“ of the statutory body is paid by the company on the basis of the agreement on performance of an Office that also stipulates the amount and maturity of the „golden parachute“. This topic is discussed particularly in the situations when the business company does not succeed in the market.

In such correlation we find it necessary to mention that the position of the statutory body (or its member) is one of the most difficult positions in the corporate world and its performance is linked with the highest demands and expectations. We also presume that imposing of the statutory body's liability shall be linked with the rationality and complexity and such imposing shall reflect the specific conditions of performance of such function. Such specific conditions are linked with the fact that decisions related to the operation of the business company that bear huge amount of risk. We presume that reflection of the „business judgment rule doctrine“ enables to take into account the specific nature of the statutory body's performance. This rule enables the acting authority to exhibit (also when the liability of the statutory body is reviewed by the court) that the statutory body acted „lege artis“. Business judgment rule is sometimes marked as the right of the statutory body to make a mistake. On the other hand, such definition might presume the negativity of the statutory body's actions. Therefore we agree with Broulík<sup>2</sup> who defines this rule as the „right for an unsuccessful result“.

According to Lasák the basic idea of this doctrine is the reticence of the court when examining the decisions of the statutory body made on behalf of the company. The abovementioned business judgment rule has its roots in the legal system of United States of America and the most important role is played by the courts of Delaware.<sup>3</sup> American statutes and precedents stipulate that the statutory bodies of the company are bound to its company by the duty of care and the level of care and knowledge applicable to the reasonably prudent person shall be applied in every situation by the statutory body.<sup>4</sup> Violation of such duty by the member of the statutory body shall be seen as negligence and represents the liability of the statutory body.<sup>5</sup> The liability of the statutory body of the company is confronted by the business judgment rule doctrine that says that the decision of the statutory body when operating the business is not subject to the court's review or the review of the shareholder and there shall be no liability of the statutory body provided that the members of the statutory body adopted their decisions on the basis of reliable information and that such decisions are made in good faith and in the interests of the company. The exceptions that are not protected by the business judgment rule are the fraud of the statutory body member or other unlawful acts of the statutory body of the company where the lack of care achieved the level of fraud or the level of gross negligence.<sup>6</sup> As the last assumption of the business judgment rule there is the requirement of the certain level of rationality of the decisions; the business judgment rule is related to the doctrine of waste that represents an irrational waste

<sup>2</sup> Broulík, J.: Pravidlo podnikatelského úsudku a riziko. Obchodněprávní revue 6/2012, p. 164

<sup>3</sup> Lasák, J.: Akciová společnost na práhu rekonstrukce: základní novinky. Obchodněprávní revue 2/2012, p. 46

<sup>4</sup> „Reasonably prudent person is the term similar to the professional and rational businessman used in Czech and Slovak terminology.“

<sup>5</sup> The liability of the statutory body is similar in the legal regulation of Slovak republic..

<sup>6</sup> Vitek, J.: Odpovědnost statutárních orgánů obchodních společností. Praha: Wolters Kluwer ČR, 2012. p. 219

<sup>1</sup> Lukáčka, P.: Vybrané aplikačné problémy uplatňovania zodpovednosti voči konateľom s.r.o. In: Bratislavské právnické fórum 2013 [electronic source] Bratislava : Univerzita Komenského, Právnická fakulta, 2013. p. 846-849

or donation of the company's property.<sup>7</sup> Particularly in relation to the impact of the decisive impact of the state Delaware in terms of the European legal systems the „Delaware effect“<sup>8</sup> or „Delaware syndrome“<sup>9</sup> is mentioned many times. The possible impact of this syndrome might be the fact that the states will decrease the regulative requirements for conducting the business activities in order to attract investors. On the one hand the attractiveness and flexibility of the business environment might be achieved. On the other hand the side effect might be the lack of creditors' or employees' protection. Some authors assume that the „Delaware effect“ is not the subject of the day in Europe and the experiences (with the European joint stock company or Societas Europea) do not signal that there shall be massive transfer of the seats of the companies from one country to the other.<sup>10</sup> In the short term horizon there might be a change that will probably occur as for the „Brexit“, i.e. the situation when the Great Britain leaves the European Union. The actual impact of „Brexit“ might be the subject of the research in the upcoming days, mostly on the number of the business companies transferring their seat or reestablishing their business within the European Union. We can say that many important business companies suggest that they shall undergo the fundamental changes in the upcoming future.

### 3 Application of the doctrine

As usually when talking about the doctrines and legal opinions the understanding of these terms is not unified and there are two (2) lines of understanding. First line sees the business judgment rule as certain liability standard upon which the courts evaluate the decisions of the statutory body members. This shall be understood as the further definition of the professional care standards and the so-called model of interpretation of the professional care. Second line of these opinions sees the business judgment rule as the waiver of the judicial review. According to the latter way of business judgment rule understanding, if the statutory body member complies with the standards of the business judgment rule, his decisions on behalf of the company will not be reviewed by court at all.<sup>11</sup>

Legal scholar Broulík<sup>12</sup> argues that even the fundamental stipulation of the business judgment rule standards are not standardized and there still are the disputes regarding the conditions to be met in order to be protected by the business judgment rule doctrine. Referring to the American legal scholar Allen<sup>13</sup> Broulík states that the fundamentals of the business judgment rule doctrine have its roots in American law, which is disunited and disharmonized within the respective American states. Even the courts themselves cannot reach an argument when it comes to the basic definition characteristics that shall be met so that the business decision was covered by the business judgment rule. The courts agree that the statutory body members shall not be held liable for the honest mistakes in business decisions. Though, most of the judges claim that the negligence of these persons is inadmissible.

Though, most of the judges claim that the negligence of these persons is inadmissible.<sup>14</sup> When evaluating the statutory body liability and applying the business judgment rule doctrine, it is important to note that until the general meeting does not approve the agreement on performance of an office, the relationship between the statutory body and the company is governed by the

respective provisions of the mandate agreement under Slovak law.<sup>15</sup>

### 4 Elements of business judgment rule

Business judgment rule was further researched by Hinsey<sup>16</sup> who published his work in Washington Law Review and defined the fundamental parts of the business judgment rule:<sup>17</sup>

- a) absence of its own intent to conduct insider trading or the trading for the purposes of achievement its own interests
- b) informed decision reflecting the rational effort (also when reflecting the professional advice of the third person) and knowledge of the relevant and available facts
- c) rational assumption that this relevant decisions is made in the interests of the business company
- d) good faith

Subject matter of the review according to the business judgment rule is the procedure that precedes the decision adopted by the statutory body. In respect of the fact that the entrepreneurial risk always lies on the entrepreneur's side, the liability of the statutory body is not the liability for unsuccessful results but it shall rather be seen as the liability for the proper and professional performance as the statutory body of the company acting on its behalf. To be more specific and factual, we would like to point out that has been very interesting case from Anglo-American legal environment. The case deals with the liability of the statutory body of the company regardless of economic outcome of the statutory body's business decision. The case „Smith vs. Van Gorkom“<sup>18</sup> has been resolved before the Supreme Court of Delaware.

In this case the subject matter was the sale of the shares of the company Trans-union for the price 55 dollars per share and the members of the administrative council (statutory body) of the company Trans-union have been held liable due to the fact that they were not properly informed about the intention of the Jeronym van Gorkom (chief of the administrative council) that suggested the sale of the shares and also that they did not try to study the conditions of the suggested transaction properly. The members of the administrative council have approved the transaction based upon the twenty minute speech of Mr. Van Gorkom. The members of the statutory body did not question the details of the transaction nor did they get to know the content of the respective contracts. The evidence shows that the members of the administrative council did not even question Mr. Van Gorkom about the rationality of the price for the shares.

According to the abovementioned the business judgment rule did not apply as for the lack of information obtained by the administrative council. The mistake of the members of the administrative council was not related to the decision made. The mistake was in the adequacy of the information that led the members of the administrative council to their decision. The judgment of the Court of Delaware further stipulated that the members of the administrative council represent the interests of the shareholders and shall perform such in accordance with the duty of care. The members of the administrative council were held „inexcusably negligent“ when approving the transaction as for the fact that the whole negotiation of this transaction took only 2 (two) hours. When deciding this case there was very interesting (even though minor) opinion of the judges of the Court of Delaware. Such minor opinion stipulated that the members of the administrative council was informed properly and in adequate manners and therefore its members were

<sup>7</sup> Petrov, J.: Odpovědnost členů představenstva akciových společností v Česko – americko – německém srovnání. Brno: MIKADAPRESS, 2007, p. 41

<sup>8</sup> McCahery A.J., Vermuelen P.M.E.: Does European Company Prevent The Delaware Effect. European Law journal, 2005, p. 5

<sup>9</sup> Drury, R.: European Look at the American Experience of the Delaware syndrome, Journal of Corporate Law Studies, 2005

<sup>10</sup> Strupáč, P.: Ustanovenie, postavenie a zodpovednosť člena predstavenstva akciovéj spoločnosti. Bratislava: EUROUNION, 2012, p. 141

<sup>11</sup> Bainbridge, S. M.: The Business Judgment Rule as Abstention Doctrine. Vanderbilt Law Review, 2004, No.1, p.87

<sup>12</sup> Broulík, J.: Pravidlo podnikatelského úsudku a riziko. Obchodněprávní revue 6/2012, p. 161-167

<sup>13</sup> Allen, W. T.: The Corporate Director's Fiduciary Duty of Care and The Business Judgment Rule. In HOPT, K. A kol. Comparative Corporate Governance – The State of the Art and Emerging Research. Oxford: Clarendon Press, 1998, p. 315

<sup>14</sup> Clark, R. C.: Firemní právo. VICTORIA PUBLISHING, a. s., Praha, 1998, p. 174

<sup>15</sup> Lukáčka, P.: Aktuálne otázky výkonu funkcie konateľa s.r.o. In Sborník příspěvků 5. mezinárodní vědecké konference doktorandů a mladých vědeckých pracovníků Karviná : Obchodně podnikatelská fakulta, 2012, p. 192-198

<sup>16</sup> Hinsey, J.: Business Judgment and the American Law Institute's Corporate Governance Project: the Rule the Doctrine and the Reality. George Washington Law Review, 1984, No. 4&5, p. 610.

<sup>17</sup> In our opinion such characteristics vastly overlap the concept of professional care of the capital business company. Therefore we assume that the business judgment rule is further specification of the professional care of the business company.

<sup>18</sup> Available at : [http://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=2763&context=fss\\_papers](http://digitalcommons.law.yale.edu/cgi/viewcontent.cgi?article=2763&context=fss_papers)

protected by the business judgment rule doctrine. The business judgment rule doctrine protects those members of the administrative council that act in good faith and are adequately informed and have no separate personal interest on the transaction.

Under these circumstances the member of the administrative council is not responsible for the consequences of his decision in case the proper information base does not miss his decision. The business judgment rule represents the "safe harbor" for the member of the administrative council because it provides to the members of the administrative council relatively wide independence in deciding about the issues on behalf of the company. The judges who had this minority opinion stated that we should not forget the particularities of the "business world" mainly in the USA. They expressed that under adopting the decision they acted as professional experts and not as ordinary types. In addition they argued by the fact that the decision of the administrative council should have been correct.<sup>19</sup> According to their opinion under business transactions in general we are faced by two extremes - perception of the reality through businessmen and entrepreneurs and perception of the reality through lawyers (judges). Businessmen are acting in an uncertain risky business with limited time space within they have to adopt fundamental decisions. They have to decide for the first or the second offered way on the base of the consideration that are not always adequately elaborated as well as not supported by as amount of the information that should be required. The judges consider the reality by different way on the base of proves that are submitted by both parties and it is very difficult to prove real state of matter after the hindsight unless it is in detail mentioned in the respective documentation in written. Finally we can state that balance and complex information on aspects must have been provided to the administrative council which is relevant in such kinds of decisions. In case the members of the administrative council do not have these information to their disposal prior the administrative council's meeting they are obliged to judge them during the meeting of the administrative council and for the purposes of its control time space must be provided to them. The members of the administrative council of the company Transunion were responsible for breaching of their duty to act with professional care despite their decision was correct. In this case the basic matter for making decision is the process of the members of the administrative council also in cases when this process held to the decision that should have been correct in its base. The members of the administrative council (statutory body) are responsible for proper performance of their functions no for the result. Although the decision *Smith vs Van Gorkom* is usually described by Anglo - American legal theorists as controversial its base is that the business judgment rule consists in sufficient decision from the side of the statutory body. Information obligation is one of the aspects of the professional care so the court in Delaware stated that the term "gross negligence" is the correct criteria for determination the decision of the administrative council was not supported. Outside the USA the business judgment rule is applied in the United Kingdom where the doctrinal interpretation is adopted similarly as in the USA the courts apply in practice.<sup>20</sup>

However the business judgment rule does not result only from common law. Germany<sup>21</sup>, Australia<sup>22</sup> as well as the Czech Republic have constituted abovementioned rule in the legal form. Changes in the legal regulation of the Czech Republic constitute one of the newest changes in the commercial regulation that constitute the business judgment rule. Against the aforementioned legal systems which include specific legal regulation of the business judgment rule respectively against countries with common law system defining conditions of this

institute is the legal regulation of commercial corporations and mainly the part of the responsibility of the statutory bodies of the commercial corporations in the conditions of the Slovak Republic that does not contain legal regulation of this institute and is not part of the states with rich common law system.

Under the provisions of the Act No. 513/1991 Coll. Commercial Code the statutory body of the capital commercial corporation is obliged to act in accordance with the interests of the company and all its members/shareholders and is obliged to obtain and to take into account under its decision all available information related to the subject matter of deciding and under the performance of its competence it must not prefer its own interests, interests of some members/shareholders or interests of third parties before the interests of the company.<sup>23</sup> We think that the mentioned legal regulation that constitute the conditions necessary for performance of the function of the statutory body or its member also reflects the business judgment rule despite the fact that this rule is not explicitly in the legal regulation stated mainly for the reason that the mentioned generally determined conditions for execution of the function of the statutory bodies "de facto" contains this rule. We hereby think that it is suitable to ask whether it is necessary for the purposes given by the business judgment rule its explicit regulation in the provisions of the legal regulation. We deem as necessary to consider the constitution of new terms with quite general and no express contain that constitute the part of already existed general terms and its interpretation (as we mentioned above) leads to discussions and under which logical argumentation as well as usage of specific methods of the interpretation allow to obtain different conclusions. A priori (without real application experience) it is not possible to reject arguments<sup>24</sup> which support the special regulation of this institute in the legal regulation of commercial law that claim the regulation should contribute to facilitate the activities of courts, improve the position of the statutory bodies and its members with higher sovereignty as well as some economic advantages for commercial corporations. The statutory bodies should have "hands free" and due to this reason they can fully focus on execution of activities that lead to the economic profit of the company and not to be limited by the reflection of its protection in case of responsibility if realized decisions do not bring expected results.

## 5 Business judgment in the legal regulation of the Czech Republic

The Act No. 90/2012 Coll. on the commercial corporation (hereinafter referred to as the "Act on commercial corporations") has become effective on 1 January 2014 which constitutes in the sections 51-53 the base for judging of business judgment rule within the Czech legal regulation. One of the problems the legislator in the Czech Republic had to deal with were the issues of the business risk under the execution of the function of statutory bodies of the commercial corporations because nowadays there can be no doubt that calculated, rational and informed risk is common practice in the commercial relationships. The Act on commercial corporations<sup>25</sup> provides that carefully and with necessary knowledge is acting who could upon business decision in the good faith expect that he is acting under provided information and upon defensible interests of the company unless such decision is executed with necessary loyalty. The explanatory report to this provision provides that the duty of the statutory body to act on behalf of the company is retained. The explanatory report states that in relation with the foreign legal regulation this provision constitutes the business judgment rule that gives possibility to the acting body to prove that within its deciding it was acting "lege artis" and is not responsible for possible damage although it can cause in the economic way. Finally the Czech legislator constitutes that if the concept of the company's function is based on the contracts with an uncertain result it is not possible to ask from the professional management to bear all the risks of its acting mainly it is not

<sup>19</sup> The shares of the company were sold for the price 39% higher than the price on the stock exchange.

<sup>20</sup> Smalik, M., Lukáška, P.: Discretion of the statutory body's decisive powers and its risk capacity. London: Science Publishing, 2016, p. 63-64

<sup>21</sup> § 93 of the German law on the shares says that the duty of care and loyalty is not violated when the members of the statutory body could rationally assume that they acted in the interest of the company on the basis of the adequate information basis

<sup>22</sup> § 180 Corporations Act 2001, available at [http://www.austlii.edu.au/au/legis/cth/consol\\_act/ca2001172/s180.html](http://www.austlii.edu.au/au/legis/cth/consol_act/ca2001172/s180.html)

<sup>23</sup> § 135a, sec.1; 194 sec. 5 Act No. 513/1991 Coll. Commercial Code

<sup>24</sup> Kožíak, J.: Pravidlo podnikateľského úsudku v návrhu zákona o obchodných korporáciách (zahraníčných právnických úpravách). Obchodnoprávny revue. 2012, No.4, p. 112

<sup>25</sup> § 51, sec.1 of an Act on commercial corporations

possible to control. In case of the new Czech regulation of the responsibility the statutory bodies the condition of the execution of business judgment related to the duty of loyalty. We can state that the business judgment rule test under the Czech legal regulation contains three (3) elements. Within the test it is examined whether the statutory body acted i) in good faith; ii) could reasonably assume that he acts with informational basis and iii) he could reasonably presume that he acts within the sustainable interest of the business company. The absence of the necessary loyalty shall prevent from the abuse of the business judgment rule. That means that the loyalty serves as the corrective of the business judgment rule. Violation of the duty of loyalty may not be remedied by the defense that the statutory body acted in accordance with the business judgment rule.<sup>26</sup>

## 6 Safe harbor

So that the statutory bodies landed in the „safe harbor“ of the business judgment rule and met its criteria, it is necessary so that the members of the statutory bodies did not undergo excessive risk which exceed the maximally admissible amount of risk within their decisive activities.

The theory of the decision uses in this relation the term risk capacity<sup>27</sup> that shall be understood as the maximal financial loss that the company might undergo and still survive.<sup>28</sup> Admissible risk is stipulated as the amount of loss that the company is willing to undergo in its risk capacity. The decision on the amount of admissible risk is the important strategic decision of the company and will be dependent on the requirements of the company's shareholders.

The negative result for the company does not have to mean that the respective member of the statutory body did not act with professional care. To decide for the conclusion of the certain contract means to decide in the real time and upon the available information. Every „manager“ is obliged to act professionally when adopting decisions. If it is proved that it secured the needed information in the reasonable scope, evaluated them and acted rationally within the business management reflecting the interests of the company and no side intents or its own interests, it is not appropriate to blame the statutory body because of the fact that the company incurred loss.<sup>29</sup> As for this correlation it is necessary to stipulated that „ex post“ evaluation of the acts of the statutory body shall be dedicated on the evaluation of meeting the criteria within the adoption of the respective decision (sustainable information basis, acting within the required level of loyalty etc.) and not on the objective evaluation of the nature of this decision, i.e. whether the decision is advantageous for the company or not.

Even if Eliáš<sup>30</sup> proclaimed that the business judgment rule doctrine already existed within Czech legal regulation even though it was not legislatively expressed and the judiciary was evolved only upon the few decisions of the Supreme Court of Czech republic. One of such decisions with the aspects of business judgment rule is the decision of the Supreme Court of Czech republic marked 29 Cdo 4276/2009 dated 30 March 2011. In its reasoning the decision stipulates that the sole fact that the statutory body did not enforce the claims of the company may not represent the violation of the statutory body to act with professional care. For the evaluation of the fact whether the statutory body is obliged to enforce the claims is very important also the evaluation of the respective effectivity and success of such proceedings and whether these claims are enforceable. Such situations occur if the debtor is clearly unable to repay its obligations (even partially) or in the situation when the company

itself (the creditor) cannot prove its statements regarding the origin, amount and the existence of the claim provided the fact that such state is not caused by the statutory body itself. In other words, the fact whether the statutory body will or will not enforce the claim of the company is solely within the scope of the business management by the statutory body. Supreme Court of Czech republic reflected the relevant provisions of the Czech Commercial Code but the reasoning contains the realization of the business judgment rule that was not legislatively stipulated and existed only in the doctrine. The decisions with the aspects of the business judgment rule may be seen in the further decisions of the Supreme Court of Czech republic, specifically in the criminal proceedings.<sup>31</sup> We agree with Bělohávek<sup>32</sup> that says the vital part in evaluating the business judgment rule lies in the hands of the courts. The courts will play immanent role at the interpretation of the terms used in the section 55 of Act on commercial corporations that are for example sustainable interest of the company, needed knowledge and information, assume in good faith, etc., as these are not specified by law at all. Bělohávek claims that the legislator rightfully looked for the inspiration in the foreign legal regulations and decisions of the foreign courts but says that the business judgment rule is presented only in sharp features and the key role will again stay at the courts. The business judgment rule is not the matter of law but the matter of doctrine and judiciary.<sup>33</sup> The legal practice showed that it is extremely difficult for the courts to evaluate whether the duty to act with professional care was or was not violated. There is no objective criterion therefor. Acting within the business relationships is always risky and undergoing the certain level of risk is everyday reality.<sup>34</sup> Every business brings the certain level of risk and the sole fact of unsuccessful transaction may not evoke that the statutory body caused damage to the company. In other legal areas such acting might be seen as conscious or unconscious negligence of the person and therefore as the violation to perform the actions with due care. In the area of corporate law it is necessary to evaluate whether such risk exceeds the suitable measures or not. Measuring of the statutory body's negligence is relativized.<sup>35</sup>

In case the courts evaluate the violation of the duty to act with the professional care „ex post“ there often is the view that is biased. Therefore it is needed to evaluate these acts „ex ante“, i.e. in the same way as the executive director decided about that.<sup>36</sup> In these cases the statutory body adopts the decision within short time horizon and based upon the bunch of information that is limited. Big hesitance might cause that the transaction does not occur and the income of the company „de facto“ decreases.

Another problem may arise in this manner when some judges are not sufficiently skilled and educated to handle the evaluation of rather economic questions. Separately such fact might occur if the judges with the general legal practice decide such cases without any specialization on the law of business corporations. In Slovak republic if the questions without legal character occur it is generally handled by the expert witness opinions or the opinions of the legal scholars.

We assume that the judges shall be the only persons responsible for the determination whether the statutory body complied with the provisions of the business judgment rule and professional care and met the criteria of „safe harbor“. We hope that the judges exercise their position carefully and use all the experience

<sup>26</sup> Koziak, J.: Pravidlo podnikatelského úsudku v návrhu zákona o obchodních korporacích (a zahraničních právních úpravách). Obchodněprávní revue. 2012, No. 4, p.108-113.

<sup>27</sup> Risk capacity

<sup>28</sup> Hnilica, J., Fotr, J.: Aplikovaná analýza rizika ve finančním managementu a investičním rozhodování. Praha: Grada Publishing, a.s., 2009, p. 84

<sup>29</sup> Havel, B. Synergie péče řádného hospodáře a podnikatelského úsudku. Právní rozhledy, 2007, No.11, p. 416,

<sup>30</sup> Eliáš, K.: K některým otázkám odpovědnosti reprezentantů kapitálových společností. Právník, 1999, No.4, p. 298,

<sup>31</sup> See the decision of the Supreme court of Czech republic dated 3 May 2007, sp. zn. S Tdo 433/2007 or the Decision of the Supreme Court of the Czech republic, sp. zn. S Tdo 1412/2007 dated 27 August 2008

<sup>32</sup> Bělohávek, A. J. a kol.: Komentář k zákonu o obchodních korporacích. Plzeň: Aleš Čeněk, 2013, p. 344

<sup>33</sup> Further, p. 345

<sup>34</sup> Smalik, M.: Doktrína pravidla podnikatelského úsudku v teorii a praxi. In: Mifníky práva v stredoeurópskom priestore 2014. Zborník z medzinárodnej vedeckej konferencie doktorandov a mladých vedeckých pracovníkov. 1. Vyd. Bratislava: Univerzita Komenského v Bratislave, Právnická fakulta, 2014, p. 391

<sup>35</sup> Koziak, J.: Pravidlo podnikatelského úsudku v návrhu zákona o obchodních korporacích (a zahraničních právních úpravách). Obchodněprávní revue. 2012, č.4, p.109, ISSN: 1213-5313

<sup>36</sup> Knepper, W.E., Bailey, D.A.: Liability of corporate Officers and Directors. New York: Lexis Nexis, 8. Vydanie, 2009, § 2.01, p. 2

achieved during the practice. Such determination shall not consist of looking for the "scape goat" and to scare the educated persons from performing as the statutory body of the company that might lead to worsening of the economic results of the business activities within the state.

## 7 Conclusion

We assume that the institute of the business judgment rule is a progressive part of the company law and its application enables to reflect the extraordinariness and specialties in the specific case. By doing so it is possible to soften the strict rules of the liability of the statutory bodies in the capital business companies. Such strict rules then lower the attractiveness of performance of a position of the statutory body. Then de facto these functions are performed by the persons that lack the professional experience and knowledge in this respective field. On the other hand it is necessary to evaluate how such institute shall be implemented in the legal orders of the state, i.e. whether such institute shall be inserted as the part of the statute or to stipulate such principle as doctrine for the decision making activity of the respective courts that shall reflect the specialties of the case by case. Therefore we assume that if the valid legal regulation enables to achieve the liberation by defining the business judgment rule, it is probably more suitable so that the exact legal norm stipulated in the statutes already reflected the decisions of the courts and the needs of legal practice. Such legal regulations shall not be based only on the principles applicable in the foreign countries that however lack the appropriateness for its usage in the home state.

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# ZERO BOUND INTEREST RATE POLICY AND THE DYNAMICS OF ECONOMIC GROWTH

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**Abstract:** The article aims to identify dependencies between the central bank's interest rate and GDP dynamics in selected economies and to highlight the risks of a zero bound interest rate policy for an economy. The hypothesis that the main interest rates and GDP dynamics in the euro area, USA and Poland are statistically significantly related to each other was confirmed. The purpose of the article was accomplished using the following methods: a review of the scientific literature, the presentation of pertinent statistical data and statistical analysis. Its findings imply that although a low cost of money can stimulate a country's economy, prolonged periods of zero bound interest rates can be a threat to economic expansion.

**Keywords:** monetary policy, zero bound interest rates, deflation, economic growth

## 1 Introduction

The years of the Great Depression in the 1930s were a period of severe deflation. In many countries where deflation has occurred despite the nominal interest rate having been reduced to almost zero economic activity slackened.<sup>1</sup> At the same time, though, in many countries deflation has not been accompanied by a lower rate of GDP growth. For instance, in 2002, deflation did not prevent the Chinese rate of GDP growth from reaching 8%.<sup>2</sup> This said, it must be noticed that the literature provides more evidence that low interest rates have a negative effect on national economies. It is also noteworthy that interest rates have a major influence on the rate of economic growth and that the influence is negative when they are either too high or too low.

## 2 Deflation, zero bound interest rates and an economy

Economies in deflation have to pay many costs, one of which arises from the "explosion" of bad debts that takes place when some debtors have to spend a higher percentage of their income to service debt liabilities when the amount of loan instalments does not change while their income (in monetary terms) decreases as prices fall.<sup>3</sup> A major threat related to a zero bound interest rate is the risk of collapse of the financial sector, because easily available loans are frequently spent on assets, which consequently drives their prices upward and thereby the value of collaterals.<sup>4</sup> A prolonged period of low interest rates can lead to the emergence of a speculative bubble in the assets market, the bursting of which can destabilize the financial sector.<sup>5</sup> Economists hold different views on how a central bank should respond to the emergence or bursting of such bubbles. Some argue that because central banks cannot recognize that a market bubble is being formed, they should focus on offsetting their impacts. A relevant example is the situation from before the most recent financial crisis, when the major central banks believed that pursuing a zero bound interest rate policy was right even at the risk of deflation.<sup>6</sup> From 2002 to 2006, the US interest rate was some 2.5% lower than that recommended by the Taylor rule<sup>7</sup> (in Taylor's opinion, the US monetary policy in the pre-crisis years was either not restrictive enough or too loose). This

departure from the Taylor rule lasted longer than in the 1970s. The Fed explained this extraordinary reduction of interest rates as an intended abandonment of conventional monetary policy rules in order to enable a discretionary intervention against deflation (such as that observed in Japan in the 1990s).<sup>8</sup> The formulas below represent the original Taylor rule and its version with parameters calibrated for the USA. The first of the formulas is the following:

$$i_t = \pi_t + \phi_\pi(\pi_t - \pi^*) + \phi_x x_t + r^*$$

where,  $i_t$  = the nominal federal funds rate in period t,  $\pi_t$  = the annual rate of inflation in period t (%),  $\pi^*$  = inflation target in period t (%),  $x_t$  = GDP gap (demand) in period t (GDP deviation from its potential level, %),  $r^*$  = the real interest rate corresponding to full employment (natural interest rate),  $\phi_x$ ,  $\phi_\pi$  = structural parameters.

The calibrated formula reads as follows:<sup>9</sup>

$$i_t = \pi_t + 0.5(\pi_t - 2) + 0.5x_t + 2$$

Baranowski noted that the Taylor rule offered a guideline for monetary policy. As well as facilitating the forecasting of interest rates, the rate is also an important element of theoretical and empirical models of the national economy.<sup>10</sup>

Another threat arising from a zero bound interest rate policy is that low interest rates can make risky projects appealing to banks. For instance, interest rate reductions in the US increased the risk of loans, because banks started to lend at lower prices and to borrowers of questionable creditworthiness.<sup>11</sup> Researchers studying Spanish loan records spanning a period of 23 years made a similar observation. They noted that interest rate reductions were followed by an increasing amount of loans granted to borrowers that either had a bad borrowing history or did not have such history at all. Their conclusion was that the credit risk increases with an extending period of low interest rates.<sup>12</sup> Having analysed the impacts of interest rates staying low for a long time after the financial crisis, Rzonca concluded that the maintenance of zero bound interest rates was harmful to economic growth.<sup>13</sup> Nevertheless, some economists believe that the quantitative easing policy should be continued, because the world economy may plunge into another crisis unless banks continue to support economic growth with low interest rates.

## 3 Analysis of dependencies between central banks' interest rates and the rate of economic growth in USA, the euro area and Poland

This section presents statistical data on the main interest rates, inflation and GDP dynamics in the USA, the euro zone and Poland, as well as the results of regression analysis of the rates' influence on GDP dynamics in these economies.

Table 1 shows the levels of the main interest rates set by the central banks in the euro area (the main refinancing operation rate), the USA (the federal funds rate) and Poland (the reference rate) between 1999 and 2016. Because the rates were frequently changed over a year, the table presents their annual arithmetic

<sup>1</sup> Rzonca A., *Stopy procentowe banku centralnego bliskie zera a ryzyko wystąpienia deflacji. Część I, „Bank i Kredyt”*, 3 No., 2004, 22 p.

<sup>2</sup> Bank for International Settlements, 73<sup>rd</sup> Annual Report, 1 April 2002 31-March 2003, Basel, 30 June.

<sup>3</sup> Buiter W.H., *Deflation: Prevention and Cure*. NBER Working Paper 9623, National Bureau of Economic Research, Cambridge, April 2003.

<sup>4</sup> Taylor J.B. *The Lack of an Empirical Rationale for a Revival of Discretionary Fiscal Policy*, "American Economic Review. Papers and Proceedings", 99 Vol., 2 No., 2009; Bester H., *Screening Versus Rationing in Credit Markets with Imperfect Information*, "American Economic Review", 75 Vol., 4 No., 1985.

<sup>5</sup> Rzonca A., *Kryzys banków centralnych. Skutki stopy procentowej bliskiej zera*, Wydawnictwo C.H. Beck, Warsaw, 2014.

<sup>6</sup> Clarida R.H., *What Has – and Has Not – Been Learned about Monetary Policy in a Low – Inflation Environment? A Review of the 2000s.*, "Journal of Money, Credit and Banking", 44 t., 1 No., 2012; Greenspan A., *Opening Remarks*, speech at a symposium of the Federal Reserve Bank of Kansas City, Jackson Hole, Wyoming, 30 August, 2002; Bernanke B.S., *Deflation: Making Sure 'It' Doesn't Happen Here*, speech at the forum of National Economists Club, 21 November, Washington D.C., 2002.

<sup>7</sup> Rzonca A., *Kryzys banków centralnych. Skutki stopy procentowej bliskiej zera*, Wydawnictwo C.H. Beck, Warsaw, 2014.

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<sup>10</sup> Baranowski P., *Reguły polityki pieniężnej w Polsce. Podejście ilościowe*, Łódź University Press, Łódź, 2014.

<sup>11</sup> Ioannidou V., Ongena S., Peydro J.L., *Monetary Policy, Risk-Taking and Pricing: Evidence from a Quasi – Natural Experiment*, European Banking Center Discussion Paper, 2009-04S No., 2008.

<sup>12</sup> Jimenez G., Ongena S., Peydro J.L., Saurina J., *Hazardous Times for Monetary Policy: What do Twenty-Three Million Bank Loans Say About the Effects of Monetary Policy on Credit Risk-Taking?*, Banco de España Working Paper, 0833 No., 2009.

<sup>13</sup> Rzonca A., *Kryzys banków centralnych. Skutki stopy procentowej bliskiej zera*, Publishing House C.H. Beck, Warsaw, 2014.

means, excluding the US interest rates in the period 2009-2016 that are shown as bands.

Table 1 Main interest rates of central banks in euro area, USA and in Poland

Year	Main refinancing operation rate ECB	Federal funds rate USA	Reference rate NBP
1999	2,90	5,25	14,50
2000	4,04	6,08	18,25
2001	3,94	3,73	14,43
2002	2,75	1,25	8,28
2003	2,25	1,00	5,88
2004	2,00	1,75	6,08
2005	2,25	3,38	5,15
2006	3,00	4,88	4,13
2007	3,88	4,50	4,63
2008	3,44	1,93	5,54
2009	1,44	0-0,25	3,88
2010	1,00	0-0,25	3,50
2011	1,25	0-0,25	4,13
2012	0,75	0-0,25	4,50
2013	0,38	0-0,25	3,21
2014	0,10	0-0,25	2,00
2015	0,05	0,25-0,50	1,50
2016	0,00	0,25-0,50	1,5

The long-term interest rates were low over the analysed years, especially in the euro area and the USA. The Polish interest rates are now at their historic low level, but at the end of the 20<sup>th</sup> c. and in the early 21<sup>st</sup> c., they were much higher than in the euro area and the USA.

Table 2 shows the 1999-2015 economic growth rates for the euro area, USA and Poland. The growth dynamics of GDP was the lowest in the euro area, somewhat higher in the USA, and the highest in Poland. It needs to be noted, however, that Poland is counted among the "catching-up" countries (emerging markets) where GDP growth is typically higher than in developed economies.

Table 2 GDP growth in Euro Area, USA and in Poland

Year	GDP growth rate in Eurozone	GDP growth rate in USA	GDP growth rate in Poland
1999	3	4,69	4,6
2000	3,8	4,09	4,3
2001	2,1	0,98	1,2
2002	0,9	1,79	1,4
2003	0,6	2,81	3,9
2004	2,3	3,79	5,3
2005	1,6	3,35	3,6
2006	3,2	2,67	6,2
2007	2,9	1,78	6,8
2008	0,4	-0,29	5,1
2009	-4,4	-2,78	1,6
2010	2,1	2,53	3,9
2011	1,5	1,60	4,5
2012	-0,9	2,22	2
2013	-0,3	1,49	1,6
2014	1,1	2,43	3,3
2015	2	2,43	3,6

Table 3 contains annual inflation rates for the euro area, USA and Poland in the same period. The rates were low in both the euro area and the USA. The Polish inflation rate was high in the years 1999-2001 but in 2002, it abruptly dropped below 2% to rise above 4% in 2004. An inflation rate of 0.7% or less was not noted in Poland until 2013 (except of 2005). The years 2014-2015 were a period of deflation.

Table 3 Inflation in Euro Area, USA and in Poland

Year	Inflation in Eurozone	Inflation in USA	Inflation in Poland
1999	2,2	1,1	7,30
2000	3,4	2,1	8,50
2001	2,8	2,3	3,60
2002	1,6	2,2	0,80
2003	2,3	2,1	1,70
2004	2,7	2,1	4,40
2005	3,4	2,2	0,70
2006	3,2	2,2	1,40
2007	2,9	2,1	4,00
2008	3,8	3,3	3,30
2009	-0,4	0,3	3,50
2010	1,6	1,6	3,10
2011	3,2	2,7	4,60
2012	2,1	2,5	2,40

2013	1,5	1,4	0,70
2014	1,6	0,4	-1,00
2015	0,1	0,0	-0,50

Below, a regression analysis of the selected variables is presented. It aimed to find out which dependencies between central banks' main interest rates and GDP dynamics in the three selected areas were statistically significant in the years 1999-2015 and to test a null hypothesis  $H_0$  (the variables' parameters are not significant) and an alternative hypothesis  $H_1$  (the parameters are significant). The variables were checked for stationarity with the use of the ADF test (the Dickey-Fuller test). The necessary data were obtained from the Eurostat, World Bank and Polish Statistical Office websites.<sup>14</sup>

Table 4 contains the regression results for the USA. The independent variables were the nominal federal funds rate [FEDF\_USA] and the nominal federal funds rate lagged by one year [FEDF\_USA\_1]; the dependent variable was GDP dynamics in the USA [GDP\_USA].

Table 4 The dependent variable (Y): GDP\_USA; independent variables (X) – FEDF\_USA and FEDF\_USA\_1

Variable name	Coefficient	Standard error	t-Student	p-value
Const	1,88835	0,458773	4,116	0,0012***
FEDF_USA	0,968802	0,263448	3,677	0,0028***
FEDF_USA_1	-0,819561	0,247387	-3,313	0,0056***

Selected regression statistics and analysis of variance:  
2000-2015 observations (N = 16))  
R-square 0,517774  
F(2, 13) 6,979167 p-value for F test 0,008732

The data in the table point out that the nominal federal funds rate and the federal funds rate lagged by one year had a significant effect on GDP dynamics in the sampled years. This conclusion is based on Student's t- statistics of 3.677 and -3.313, respectively, and on the probabilities of obtaining them ( $0.0028 < p=0.05$  and  $0.0056 < p=0.05$ ) that allow rejecting the null hypothesis  $H_0$  in favour of the alternative hypothesis  $H_1$ . There is a 95% probability that between 1999 and 2015 both these rates and GDP dynamics in the USA were statistically significantly related to each other. The value of the coefficient in table 4 is negative (-0.819561) only for the second rate, meaning that the influence of interest rates on GDP dynamics in the USA is consistent with economic theory. Further, the coefficient for the nominal federal funds rate is positive (0.968802), indicating that the GDP growth rate in the USA increases as the Fed raises the federal funds rate. Table 5 shows the regression results for the euro area. In this case, the independent variables were the ECB's main refinancing operation rate [REF\_ECB] and the ECB's main refinancing operation rate lagged by one year [REF\_ECB\_1]; the dependent variable was GDP dynamics in the euro area [GDP\_ECB].

Table 5 The dependent variable (Y): GDP\_ECB; independent variables (X) – REF\_ECB and REF\_ECB\_1

Variable name	Coefficient	Standard error	t-Student	p-value
Const	1,30129	0,540457	2,408	0,0316**
REF_ECB	2,20292	0,363609	6,058	4,04e-05***
REF_ECB_1	-2,07964	0,389467	-5,340	0,0001***

Selected regression statistics and analysis of variance:  
2000-2015 observations (N = 16)  
R-square 0,739698  
F(2, 13) 18,47099 p-value for F test 0,000159

An analysis of the data in table 5 leads to a conclusion that the ECB's nominal interest rate and the nominal interest rate lagged by one year rate had a statistically significant influence on GDP dynamics in the euro area. A proof of this is Student's t-statistics of 6.058 and -5.340, respectively, and the probabilities of obtaining them ( $4.04e-05 < p=0.05$  and  $0.0001 < p=0.05$ ) that allow rejecting the null hypothesis  $H_0$  in favour of the alternative hypothesis  $H_1$ . There is a 95% probability that in the period under consideration both these rates were statistically

<sup>14</sup> <http://data.worldbank.org/indicator/NY.GDP.MKTPK.D.ZG?locations=US>;  
<http://appsso.eurostat.ec.europa.eu/nui/submitViewTableAction.do>;  
<http://stat.gov.pl/wskazniki-makroekonomiczne/> (access: 10.10.2016).

significantly related to GDP dynamics in the euro area. As in the previous case, the coefficient is negative ( $-2.07964$ ) only for the ECB's main rate lagged by one year, implying, again, that the effect of interest rates on GDP dynamics in the euro area was consistent with economic theory. The positive value of the coefficient for the ECB's nominal interest rate ( $2.20292$ ) indicates that the raising of interest rates by the ECB stimulates GDP growth.

Table 6 presents the regression results for Poland. The independent variables in the analysis were the NBP's reference rate [REF\_NBP] and the NBP's reference rate lagged by one year [REF\_NBP\_1]; the dependent variable was the dynamics of Polish GDP [GDP\_POL].

Table 6 The dependent variable (Y): GDP\_POL; independent variables (X) – REF\_NBP and REF\_NBP\_1

Variable name	Coefficient	Standard error	t- Student	p-value
Const	4,46671	0,667096	6,696	1,48e-05 ***
REF_NBP	0,386282	0,189698	2,036	0,0626 *
REF_NBP_1	-0,461657	0,177164	-2,606	0,0218 **
Selected regression statistics and analysis of variance: 2000-2015 observations (N = 16)				
R-square 0,355107				
F(2, 13) 3,579188 p-value for F test 0,057766				

The above data indicate that both independent variables significantly influenced the dynamics of the country's GDP in the analysed period. This conclusion can be drawn from Student t-statistics of 2.036 and  $-2.606$ , respectively, and from the probabilities of obtaining them ( $0.0626 < p=0.1$  and  $0.0218 < p=0.05$ ) that allow rejecting the null hypothesis  $H_0$  in favour of the alternative hypothesis  $H_1$ . There is a 95% probability that in the analysed years the relationship between NBP's reference rate and the reference rate lagged by one year, on the one hand, and the dynamics of Poland's GDP, on the other, was statistically significant. The negative value of the coefficient ( $-0.461657$ ) for the first rate indicates that the relationship was consistent with economic theory again. The coefficient for the second rate is positive ( $0.386282$ ), meaning that the Polish GDP increased following rises in the NBP's reference rate.

The results of the analysis indicate that in the sampled years the dependencies between central banks' main interest rates and GDP dynamics were statistically significant in the USA, the euro area and Poland. As monetary policy plays a significant role in economies, central banks need to be watched carefully for changes in their interest rates.

#### 4 Conclusions

Economic policy makers take interest in deflation only when inflation rates fall substantially and the short-term interest rates are reduced. The maintenance of near-zero nominal interest rates frequently prevents the use of measures counteracting deflationary shocks that affect price levels and production. The purpose of this article has been to highlight that there are significant relationships between central banks' main interest rate in the USA, the euro area and Poland and the rate of economic growth in these regions. As regards the consequences of these relationships, both interest rates that are too low or too high can have a negative effect on an economy.

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#### Primary Paper Section: A

#### Secondary Paper Section: H

## STUDENTS' IMPLICIT THEORIES ABOUT QUALITY AT THE ART EDUCATION

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**Abstract:** In the art education (AE), the concept of "quality teaching" is often associated with the product, material sources or students' talent. It is primarily the teacher who affects the quality of the subject, his education and idea of the quality. The research outcomes of students' implicit theories about the quality in the AE indicate shared perception of formative influence of external conditions more than actual teachers' performance. The need for raising students' didactic and professional skills shows as crucial in order to achieve the quality of the subject. In practice, it is the pressure put by management and schools founders on the quality of subject and support of further teacher training. Quality barrier resulting from material equipment or time allocation is, compared to insufficient competencies of the teacher, only secondary.

**Keywords:** art education, quality of education, characteristic of quality, primary education, implicit theories

### 1 The concept of quality in education

Increasing requirement for achieving high-quality education, especially in recent two decades, is significantly emphasized. The reason is that market pressure which emphasizes the requirement of the ability of individuals and societies to succeed in strongly competitive world as well as the change of the philosophy of education itself. The quality standards are thus subject to different requirements than before. Above all, it is a change of perception of quality as the given "state" towards to the "process" which is not closed (Kessler, 2013). The emphasis on achieving of quality and the constant quality improvement is therefore raised from the side of school, its founders, parents, pupils and the market.

Clearly define the quality of education is very difficult. In this question experts agree primarily on the issue that quality is a concept hard to grasp, like any absolute value (Harvey Green, 1993). Cheng (1997) shows that the concept of quality will always be perceived differently depending on who it assesses and on the criteria of individual judges. These are not only different views on one fact, but different views on various facts that only have the same name (Harvey Green, 1993). Quality can be perceived either as an absolute category, as ideal or certain threshold set by standard, or can be seen as dynamic, according to the context, changing category.

#### 1.1 Quality in Education

Cheng (1997) defines quality of education as "a complex of components that are present at the input, in process and at the output of the educational system and guarantee the satisfaction of all explicitly and implicitly defined requirements of educational institution" (p. 23). At the same time he points out the fact that "quality is a multi-faceted concept and therefore cannot be judged according to one indicator" (p. 23). Within the context of the Czech Republic, to the issue of quality education are significantly devoted Janík (2010, 2012, 2013), Janíková, Vlčková (2009), then in art education it is Slavík (Slavík, Dytrová, Fulková, 2010; Slavík, Lukavský, 2013). Janík, equally to foreign authors, points out the complexity of the issues and the difficulty in finding the criteria of its assessment, because they depend on the perspective adopted by the assessor. He draws particular attention to the need to define, besides the quality, also the poor quality and to start using this concept specifically, not only as an indication of optimal state. As the important indicator of quality of teaching Janík perceives especially teacher's pedagogical content knowledge and his

ability to transform learning content (Janík, 2008, 2009, 2010; Slavík, Janík 2012).

#### 1.2 Quality Models

Quality assessment models used in marketing and management processes have become an important inspiration for assessing the quality of education. Frequently used example is e.g. TQM model (Total Quality Management) (Tanner, De Toro, 1992; Bonstingl 2001), or IPO (Input- Process- Output) (Chua, 2004). Important initiative for quality assessment in teaching practice offers Cheng (1995). Based on models for organizational and school effectiveness he defines seven possible models applicable to requests, assessing and adjusting terms of quality. It concerns 1. Goals and specification model; 2. Resource - input model; 3. Process model; 4. Satisfaction model; 5. Legitimacy model; 6. Absence of problems model and 7. Organizational learning model. These individual models show that it is necessary to distinguish quality not only at input, in process or at output, but to perceive indicators internal and external. It is necessary to take into consideration the perspective of accessor - whether it concerns the quality perception by pupil, teacher, parent, school, project owner of standardized test, potential employer or related level of education. These examples clearly show that research of quality in the learning process and its assessment require a clear definition of the field, goals and the chosen perspective. Otherwise it is not possible to grasp this vast and difficult concept.

### 2 Quality in the Art Education

Quality bound to a specific field, changes the definition and conditions of quality assessment in no significant way. What is only significant to note is that *"the quality in field of arts rather refers to undivided nature of a certain thing or an experiential area, while science seeks to detect qualities as measurable quantities"* (Janík, 2012, p. 246). The view of quality as a static standard or a dynamic process and transformation is further elaborated by e.g. Burrows, Harvey Green (1992), Harvey, Green (1993). The viewpoint of the standard can be seen as mandatory content of the curriculum, process as formation of knowledge by pupil himself or teacher's ability to transform the content of the curriculum and to support own learning of pupils. In direct teaching practice it is important to see both of these aspects.

#### 2.1 Quality Barriers in art education practice

The look into the practice based on empirical evidence and research suggests that the issue of quality of art education at the primary school is perceived very loosely and is shaped primarily by external material conditions and by achieved knowledge of the teacher. Šobánková (2012), according to research shows that teachers do not understand RVP and curricular documents. These documents generally define not only the subject goals, expected outcomes and key competencies of pupils, but also define the basic indicators of the quality of the subject. Štěpánková (2015) on the example of creativity shows that the future nor the present teachers are clear about fundamental issues that determine form and realisation of art education. It concerns questions like: "What is creativity?", "What are the characteristics of creative pupil?", "Is creativity a gift or may be supported and developed in the school?". Creativity is in fact regarded as a key competence, not only in art education. According to creativity the quality setting of the entire educational process is assessed. Significant barrier to achievement of quality is a low professional self-efficacy of teachers (Bandura, 1996, 1999; Pajares, Urda, 2006). The self-efficacy is the belief in own professional abilities and skills, the strength of conviction to succeed in given activity. This personal approach of self-efficacy influences the quality of content and curriculum mediation. Self-efficacy is formed within the entire educational history of student. It is mainly based on early

experience from the period of self-education and initial experience from the teaching practice (Bandura, 1999, 2006; Lemon, Garvis, 2013). Insufficient professional training in art subjects, along with experience with the subject at the pre-primary and primary school sets then a low level of educational content quality passed by prospective teachers at the first stage of primary schools. So the teacher teaches what he knows himself. More precisely, what he believes he knows. Researches carried out outside the context of the Czech Republic show that the problem of implementation of quality in art education is general. The cause is a wide scope of subjects of the teachers at the first stage, professional training not covering the entrance deficit knowledge of students and their own problematic experience with the subject in the past (Bresler, 1992; Brown, 2006; Lemon, Garvis, 2013; Garvis, Twigg, Pendergast, 2011). Teachers are during preparation logically focused more on native language and mathematics that are important for school and moreover are an easily measurable indicator of success of education and thus its quality. These subjects constitute 50% and more in a weekly schedule of pupil at the first stage. Other educational subjects in general are therefore moved into the second- or rather third-line of interest.

## 2.2 Quality indicators in art education

Own quality indicators of art education in the Czech Republic can be found generally in RVP (2007), which defines three educational domains, along with required outputs. More detailed resolution can be found in the concept of a comprehensive curriculum (Day, Hurwitz, 2012), on which DBAE is based (Delacruz, Dunn, 1996; Greer, 1997) and in the concept VCAE (Anderson, Milbrandt, 2005). The transformation of look at the meaning, aims and philosophy of education is reflected by the theory of didactics in various national contexts. The curriculum in visual education takes place in four basic categories on which a different emphasis is put: 1. Art production, 2. Aesthetics, 3. Art criticism and 4. Art history. The outputs in field of Aesthetics and Art criticism are specified by VCAE of visual literacy; AIE (UNESCO, 2006) on multicultural understanding and social issues; postmodern theory about ways of interpreting art and gender issues. The quality of teaching is however directly dependent on the person of teacher, his education, ideas about the goals and purpose of the subject, according to his own experience, professional self-efficacy and also according to values and beliefs shared by society. Hayes et al. (Project Zero, 2009) presents extensive research mapping teachers' ideas about the attributes of quality in art education. He describes in detail particular areas shaping the quality of art education. It concerns 1. students learning, 2. pedagogy, 3. community dynamics and, 4. environment.

## 2.3 Implicit theories of teachers

Bandura (1977, 1986) shows that self-efficacy is significant indicator of future behavior, performance and aspirations. Besides attitude towards own competencies and ideas about oneself, personal and shared conception of construct, to which competencies are related to, is important too. This also influences the attitude and activity. Runco (1999, p. 27) states that *"Laic" constructs are very important as they shape and show attitude to given reality ingrained in the context of community, culture, society.* Research of implicit theories reveals shared ideas and stereotypes kept regarding the construct (Sternberg, 1985; Plucker, Renzuli, 1999; Runco, 1999). Realisation of art education in practice is shaped by the whole complex of effects - shared ideas about the meaning, aims and quality of the subject, gained experience in the subject, achieved knowledge, but also ideas about own knowledge and skills. This definition of quality teaching by far need not match the level of quality required by higher authorities. Knowledge of implicit theories thus enables to plan and evaluate efforts to promote art education quality in better way.

## 3 Methodology

The aim of the research was to ascertain the students' ideas about the ideal realisation of art education and what attributes of quality in art education they recognize. The research was conducted among students of 3rd to 5th grade of Teaching for primary schools at the University of Hradec Kralove. All interviewed students had completed practical art training and basics of general didactics and had at least a minimum practise experience (1th- 3rd grade 64,6 %). Students of 4th and 5th grade (35,4 %) had attended also professional didactic teaching. The research was conducted in three phases: 1. Analysis of sources, curriculum documents and researches describing the quality, 2. interview in focus groups (5 x 15 students of primary education), 3. survey. For research was selected a combined design, most of the questions were open-ended, for their evaluation was used content analysis and the frequency phenomena was determined. The categories were designed on the base of research about the quality of art education, comparison of curricula, documents defining quality in education (e.g. UNICEF, 2004; RVP, 2007; Project Zero, 2009; Burrows, Harwey, Green, 1992) and preliminary research. Part of the questions was evaluated on a five-point Likert scale. Data collection took place in September and in October 2016, questionnaires were sent electronically to students with an opportunity to fill them in printed form. The main research questions were inspired by Project Zero at Harvard University (Project Zero, 2009) determining the teachers' ideas about the quality in art education. For research purposes in the Czech context, the questions were modified. This report focuses on the questions: 1. *What is your fantasy about high quality art education?* 2. *What do you consider to be indicators of quality of art education?* We analyzed responses from 113 respondents.

### 3.1 Research findings

#### Students' fantasies about high quality of art education

These fantasies were concentrated mainly on field of applied didactic means and forms of teaching 31 (27,4%). It concerned visits of galleries, exhibitions and excursions, work in plein air or in studio, thus in the space offering a wider range of educational opportunities than a conventional classroom.

As another important indicator of quality of art education were mentioned techniques and innovative art methods 30 (26,5%) (*"interesting", "new", "action" techniques, "paint splash", "body painting", "someone known technique"*). The f a class, not as means bound to a specific visual problem.

The attractive context of answers shows that it is mainly about technique itself, that is regarded by students as a satisfactory aim and a scope onness of teaching 23 (20,3%) was the third most frequently represented indicator of the quality of art education (*"funny", "kids like it", "looking forward", "brings joy and satisfaction"*). This attribute falls more into the category of general wishes. It says nothing about the nature of "attractive" teaching, professional qualities of the teacher, his conception, methods of teaching, subject matter. In terms of question of subject matter 23 (20,3%) respondents agreed that the *"teaching should be useful and meaningful", "to familiarize with art education", "create relationship to art education and art itself", "should have content like any other subject, "" to fulfill set targets"* etc. The statements reflect the need of students to fill up the subject with the content, but with no ability to define it precisely. The most specific request was formulated as a *"learn to draw", "to mix colours, "to become acquainted with the history of art."* The above-mentioned positive attitude towards the subject is not created only by interesting techniques, experiments with art materials or satisfaction of students and relaxing nature of the subject. It largely depends on the extent of autonomy granted to the pupil 21 (18,5%). The teacher's ability to delegate a part of responsibility for learning to the student (freedom or participation within the choice of theme, methods, methods of processing) is based on the professional qualities of the teacher, as well as the choice of didactic means, most often quoted by

students. Teacher's qualities 18 (15.9%), however, were stated as only the seventh in the order ("has a target", "can explain", "supports individuality", "partner", "professional").

Without an opinion and personal idea what is quality teaching of art education, there were 25 of respondents 25 (22.1%) ("I do not know", "never thought about it", "it's hard to be precise"). This is an alarming, though not a surprising fact. The interviewed students had passed both professional and didactic education, however too broad scope of their studies and their low self-esteem in the field of art education partly explains this figure.<sup>1</sup>

The imagination of high quality art education			
1.	Didactic methods	31	27,4 %
2.	Techniques	30	26,5 %
3.	Without opinion	25	22,1 %
4.	Subject matter	23	20,3 %
5.	Attractiveness	23	20,3 %
6.	Autonomy	21	18,5 %
7.	Artistic Means	20	17,6 %
8.	Teacher	18	15,9 %
9.	Time	4	3,5 %
10.	Modern technology	1	-

#### Quality indicators in art education

This question was determining specific effects and facts recognized by students as indicators of quality. First place went to originality 41 (36.2%), ie. divergence from standard. Among children of younger school age, this criterion is relatively easy to reach and it is relatively a well qualifiable attribute of artistic works ("mutually distinct works", "different", "original", "interesting"). Followed by autonomy 36 (31.8%), pupil's option to choose his own approach, method of elaboration, grasping of topic. This attribute is important indicator of the quality of the subject and one of the education goals at the same time. In both cases it concerns the competence linked to didactic and professional skills of the teacher, his teaching methods and formulation of subject matter. Space decoration 30 (26.5%) helps to create a friendly environment and thus contributes to external conditions of quality, still it is the artistic quality of exhibited works, not the mere fact that the works are exhibited. Similarly, the originality of the work is not necessarily the indicator of quality. Art means 14 (12.3%) were assessed as less important quality indicators and in the fantasy about the "ideal" teaching were mentioned by 20 respondents (17.6%).

Quality indicators in art education			
1.	Originality	41	36,2 %
2.	Autonomy	36	31,8 %
3.	Space decoration	30	26,5 %
4.	Attractiveness	34	30 %
5.	Teacher	26	23 %
6.	Subject matter	20	17,6 %
7.	Art means	14	12,3 %

#### 4 Discussion

It can be summarized that idea of prospective primary school teachers about the quality characteristics of the subject arises mainly from its entertainment value and attractiveness. Subject matter, professional quality of teacher, chosen didactic techniques and methods only serve this aim. On the contrary, about curriculum content and the specific idea of the method of didactic transformation, we learn very little. Students perceive well the need to chose good didactic methods that increase the attractiveness of the subject (excursions, art galleries, plein air),

allow to strengthen the autonomy of student and get him involved in project based learning. However, if the aim is a simple distinction from traditionally taught lessons (interesting techniques, spectacular art materials, action art procedures), it can not be regarded as a sign of quality. Attractiveness of the subject, emphasized by students, depends on teacher's personality, his professional knowledge and ability to present it to the pupils. Interesting techniques or sufficient amount of material themselves are not able to satisfy demands for the subject, cognitive needs of pupils or student's demand for autonomy, if they are not tied to the specific content and the visual problem being solved. Attractive form can convey the content more effectively, quality material and external favorable conditions are equally important, but they are not a panacea. If teacher lacks artistic field competencies, vision and target of the content, the art education in his conception will be a useless subject. It will not be tied to the needs of pupils, nor to the needs of society. Much required creativity, ability to think creatively and to fulfill oneself creatively is developed especially in art education. If creativity in this subject is overlooked and especially at a younger school age, it can not be expected, nor required later.

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<sup>1</sup> The item "I consider myself a good artist," shows that own professional skills are assessed by students rather at the lower border: neither yes / neither no 41,6%; rather not and certainly not 28,3% (69,9%). "I can easily think creatively" neither yes / neither no 37,2%; rather not and certainly not 15,1% (52,3%).

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#### Primary Paper Section: A

#### Secondary Paper Section: AM

## DIFFERENCES BETWEEN SELF- AND OTHER-RATING AND THE INFLUENCE ON THE PROBABILITY TO TAKE PERSONAL DEVELOPMENT ACTIONS

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**Abstract:** Leadership theory has been studied extensively throughout the last century and has been offered as a solution of most of today's organizational problems. Many different leadership theories have been developed and researchers have strived to find the one best and most effective leadership style. But to develop individual leaders and effective leadership processes is not enough to only choose the supposing right leadership theory and then train people to apply those theories. It is also the process of leader and leadership development that separates successful from unsuccessful initiatives. Today many scholars agree that 360-degree feedback is a powerful tool in the process of leadership development. The aim of this paper is to develop a model ("Feedback and reaction-model") that allows the investigation of how differences in the self- and others view are increasing or decreasing the likelihood for participants of leadership development programs to take individual actions to increase their own capabilities following a 360-degree feedback.

**Keywords:** Leadership Theory, Leadership Development, Feedback

### 1 Leadership theory as a basis for leadership development

Leadership theory is one of the most studied subject of social science where historically researchers have been trying to find the one best leadership style. Currently research is supporting the theory that there is no single best leadership style but rather a combination of different styles applied appropriately is leading to success (Palestini, 2009). To understand the evolution of leadership theories the starting point for this research will be in the period of World War II. In the 1930s and 1940s trait theory of leadership emphasized on characteristics, stating that successful leaders possess certain personality, social and physical traits (like height or physical appearance) that distinguish them from non-leaders. Due to the limited capability of traits to predict successful leadership the view in the 1950s changed to the behavior of individuals in organizations. Behavioral theories state that the behaviors of effective leaders are different from ineffective leaders and those behaviors can typically be clustered in production-oriented and employee-oriented behavior. Research at the Ohio State University discovered two separate leadership behaviors which were clustered in an initiation (task-oriented) and consideration (people-oriented) structure of leadership. An initiation structure subsumes a leaders' approach to structuring roles for leaders and group members, initiate actions, schedule work, assign employees to tasks and maintains standards of performance to meet organizational goals. Consideration on the other hand refers to the extent to which a leader exhibits concern for the welfare of group members, respects subordinates' ideas, builds mutual trust between leaders and subordinates and considers employees' feelings (Palestini, 2009). Behavior like trait theories are seen as stable properties of leaders not taking into account specific work context or situations (Glynn & DeJordy, 2010).

In the 1960s situational or contingency theories appeared as a reaction to the limitations of trait and behavioral theory of leadership. These theories acknowledged the fact that leadership vary across situations and tried to specify the circumstances and conditions under which certain leadership behaviors will be more or less successful. Situational theories assume that different situations require different characteristics and that no single optimal psychographic profile of a leader exists. Leaders are seen to have a specific collection of attributes which they can apply depending on the specific employee they lead or situation they find themselves in. (Carasco-Saul, Kim, & Kim, 2015).

Barling (2014) conducted extensive research, analyzing leadership theories between 1970 and 2012 to get an insight of the relative frequency that a particular leadership theory has been studied in academic literature. From his findings he concludes, that transformational leadership is currently the most frequently researched leadership theory and therefore so called new-genre leadership theories most likely begin with the transformational

leadership theory. It was James McGregor Burns (1978) who in his highly influential work on leadership first distinguished between the two terms of transformational and transactional leadership.

Transactional leadership is based on the assumption that the relationship between leader and follower is based on exchanges or implicit bargains (Den Hartog, Van Muijen, & Koopman, 1997). To get things done, leaders and followers engage in crucial transactions where expectations and targets are set, and recognitions and reward are provided when a task is completed (Barling, 2014). To be effective, leaders make and fulfil promises of recognition, pay increases or advancements for well performing employees and penalize who do not perform well (Bass, 1990). The leader is seen to be responsible for compensating when the job or environment of the follower is failing to provide sufficient motivation, satisfaction or direction (Den Hartog et al., 1997). Transactional leadership includes three different behaviors. Contingent reward involves behaviors like the setting of goals, the promise of rewards for good performance and the recognition of accomplishments. Management by exception behavior can be active or passive. Leaders pursuing an active management by exception watch and search for deviations from rules and standards and their response to lapses are immediate and often seen as embarrassing and intimidation by followers. Passive management by exception behavior emphasizes also on employees' errors and mistakes but the intervention occurs only if the standard is not met and matters become too serious. The third leadership behavior is the laissez-faire behavior where leaders abdicate responsibility, fail to provide the needed direction and avoid to make decisions (Bass, 1990; Barling, 2014). In many cases such a transactional approach to leadership is expected to lead only to mediocrity (Bass, 1990). Although many of these behaviors are important and necessary they don't reflect good leadership but rather good management.

The concept of transforming leadership was initially outlined by Burns (1978) as the opposite of transactional leadership. He described transforming leaders as visionary change agents that also morally uplift followers to be leaders themselves and are more concerned with the group interest than with their own self-interest (Goethals et al., 2004). Bass (1985) build on the work of Burns and further expanded and exchanged the term transforming to transformational leadership while identifying behavioral indicators for each of the two constructs of transactional and transformational leadership. It can be said that "transformational leadership involves inspiring followers to commit to a shared vision and goals for an organization or unit, challenging them to be innovative problem solvers, and developing followers' leadership capacity via coaching, mentoring, and provision of both challenge and support" (Bass & Riggio, 2006, p. 4). Four components, often also called the four I's of transformational leadership, have been defined. These components are idealized influence, inspirational motivation, intellectual stimulation and individualized consideration (Barling, 2014). The theory of transformational leadership, especially the individualized consideration of transformational leaders emphasizes on the need of individual recognition but also recognizes the fact that followers have different aims, needs and desires.

### 2 Leadership development programs and multirater instruments

It is through the use of multi-rater instruments and the discrepancies between self- and others-rating that one can get more insights into a leaders' interpersonal world (Brutus et al., 1999). Literature shows that self-perception can contribute to individual and organizational outcomes. Through the use of ratings generated by multi-rater instruments, the degree of agreement between self-perceptions and the perceptions of



others can be employed to test this argument (Fleenor et al., 2010).

The question arising is, whether leaders who are receiving feedback from peers, subordinates or their managers, that deviates from their self-rating, are more likely to see a need to take actions in their development compared to leaders where self- and other-ratings are very much alike. It is also important to understand if high or low others-ratings influence the reaction of the individual receiving the feedback. The proposed model should help to understand leaders' reaction to differences between their own view about themselves and the view of others. This is particularly important because a deeper knowledge about the behavior of employees receiving feedback can help to understand the level of intervention and support employees need when certain feedback outcomes are achieved. Brett and Atwater (2001) state that "a better understanding of the emotional and cognitive reactions is needed" if participants should benefit from the feedback process and organizations want to retrieve their investment (p. 941). Thus, it is the question to what extend the different self-other rating groups influence the perception of feedback usefulness and accuracy as well as the intend of leaders to take their development actions into their own hands.

In one study, Fecteau et al. (1998) investigated factors that influence the perception of leaders when receiving 360 degree (i.e. multilevel) feedback. They found that managers' acceptance of subordinate feedback increased with increased favorableness of the feedback. Managers also tended to value the feedback as more useful, the higher their overall score according to their subordinates' ratings was. Brett & Atwater (2001) conducted research on how discrepancies in self-other feedbacks were related to reactions and receptivity to development as well as recipients' perceptions of usefulness and accuracy of the feedback. They found that less favorable ratings were related to beliefs that feedback was less accurate which led also to negative reactions. And because over-estimators (leaders rating themselves higher than others) believe that their level of performance is already high, they may ignore developmental feedback and fail to improve their performance (Fleenor et al., 2010). It is the influence of a leaders' reaction to 360-degree feedback, that is determining whether they take actions to improve their performance or not, determining and showing their willingness to learn. But how reaction on others' feedback is influencing actions is a research field that has been neglected and deserves more research attention (Fecteau et al., 1998).

Atwater and Yammarino (1992) introduced the idea to use rating agreement categories to analyze self and others' agreement data. This approach requires computing difference scores between self- and others' ratings and calculating the mean and standard deviation of the difference scores. Individuals are classified into groups based on the extent of their self-others' difference (i.e. the standard deviation from the mean self-others difference). Initially recommending three rating agreement categories Yammarino and Atwater (1997) extended their model to four categories, (a) Over Estimator (where the self-rating is higher as the others-rating), (b) In-Agreement/Good (with a high self- and others-rating) (c) In-Agreement/Poor (a low self- and others-rating) and (d) Under Estimators (the self-rating is smaller than the others-rating).

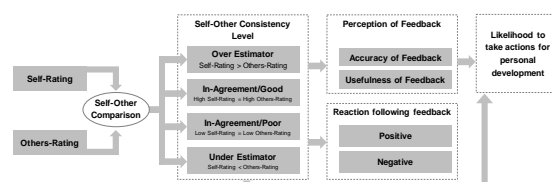
### 3 How differences in self- and other rating can influence the likelihood to take personal leadership development actions – Development of a research model

Can differences in self- and other-ratings that managers receive through a 360-degree feedback program have an impact on them to an extend that they are more or less likely to change their current behavior and take personal development actions. Fleenor et al. (2010) recommends to use simple indices such as comparisons of self-ratings to the mean ratings across rater groups, when giving 360-degree feedback to leaders and that in these situations, an overall index of rating agreement would be a

useful indicator of whether an individual has a general tendency, for example, to under- or overestimate his or her performance.

It has been shown, that while there is an overlap between the acceptance and the perceived usefulness of others-feedback, these variables are not completely redundant and therefore must be treated as separate dependent measures (Fecteau et al., 1998). The model has to measure four components, (1) accuracy; (2) usefulness; (3) reaction to the feedback provided to the participants and (4) the likelihood to take development actions because of the feedback.

Figure 1: Differences in self- and others-rating and the influence on perceived usefulness, accuracy and likelihood of development actions



Source: Relation of variables, created by the author

Figure 1 shows the connection between the self-other consistency rating with the perception of feedback and the reaction to feedback. Accuracy measures the level to which managers feel that the received feedback truly reflects their competencies. The aim is to evaluate if recipients of feedback see the feedback as too positive or too negative. Fecteau et al. (1998) for example used the term acceptance instead of accuracy to measure the "extent to which leaders believed that the feedback they received was an accurate representation of their performance" (p. 437).

Usefulness as the second component of the model is examining the level to which the managers see the feedback to be useful for their development.

The third area, likelihood to take personal development actions, is measuring the probability that managers that found development possibilities are taking actions to improve. How the managers react after receiving feedback can be evaluated through the selection of a predefined mood. Positive (inspired, encouraged, informed, aware, pleased, motivated, enlightened), and negative (angry, judged, confused, examined, criticized, discouraged) emotions have been previously defined by Brett and Atwater (2001) and will be applied in the questionnaire. Scherer (2005) argued that individuals who have to describe their own feelings often have problems to come up with appropriate labels and that difficulties can arise because of different vocabulary. He further states that participants might want to answer with a term or category that is not provided and therefore have to take the next best alternative or a residual category like "other" and therefore the accuracy of the data suffers (pp. 712). This is taken into account and therefore a questionnaire will have to distinguish between positive and negative feelings but will also provide an open category for the participants where they can add describe other feelings. These feelings are then allocated to the rather positive or rather negative category.

As explained, this model is focusing on receiving insights about participants' perception and reaction on their received feedback. Managers' perception of feedback to be accurate and useful and the likelihood to take individual development action are defined as the dependent variables and the differences in ratings between self- and others are defined as the independent variables. The four components, perceived accuracy of the feedback, perceived usefulness of the feedback, the type of reaction (being positive or negative) and the likelihood to take personal development actions are the dependent variables in the developed model. The difference between rating groups (split in four subgroups) are the independent variable. The self- and others rating are split into

four groups, namely (a) Over-Estimators; (b) In-Agreement/Good; (c) In-Agreement/Bad and (d) Under-Estimators as recommended by Yammarino and Atwater (1997). According to their clustering, “over estimators” rate themselves higher as their raters do. Participants that are “In-Agreement/Good” have a high self- and others-rating whereas participants in the group of “In-Agreement/Poor” have a low self- and others-rating. Finally, the “Under-Estimators” are the group where the self-rating is lower than the others-rating. The model tests the likelihood that a participant of the survey will take his own development actions because of the type of feedback (i.e. difference between self- and others-rating) and the relationship between perceived usefulness and accuracy with the likelihood to take individual development steps.

#### 4 Conclusion/Suggestion

After developing the model, it now has to be tested within a group of leaders undergoing a leadership development program and receiving a 360-degree feedback including their self-rating and the rating of others. This can provide further insight on how participants of leadership development programs react on provided feedback and how likely they are to take individual action to improve their capabilities.

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#### Primary Paper Section: A

#### Secondary Paper Section: BC

## **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

## COMPARISON OF BREAD KVASS FERMENTED WITH DIFFERENT YEASTS

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**Abstract:** The aim of this study was to compare physicochemical and sensory characteristics of kvass fermented with *Saccharomyces cerevisiae* and *Kluyveromyces marxianus*. Naturally fermented bread kvass was made from dried rye bread rusks. Kvass fermented with *S. cerevisiae* had higher dry matter content (8.6%) and lower pH (3.88) compared to kvass fermented with *K. marxianus* (7.0% and 4.60, respectively). Results of hedonic evaluation did not show significant differences ( $p > 0.05$ ) between the preference of kvass samples among panelists; consumers, however, preferred kvass fermented with *S. cerevisiae*. Evaluators reported considerable differences in colour ( $p < 0.05$ ) while aroma of both kvass samples was similar.

**Keywords:** kvass, non-traditional yeast, hedonic evaluation, *Saccharomyces cerevisiae*, *Kluyveromyces marxianus*

### 1 Introduction

#### 1.1 Kvass beverage

The past several decades have seen a sharp increase across the globe in the consumption of caloric beverages [Popkin, 2012]. Although their regular intake has been associated with human health problems, carbonated soft drinks remain one of the most frequently consumed ready-to-drink beverages in the world [Francisco et al., 2015]. Soft drinks are defined as water-based flavoured drinks usually with added carbon dioxide and with nutritive, non-nutritive, and/or sweeteners with other permitted food additives [Ryan, 2014]. They present particular characteristics such as high sugar content and acidity, and are available on the market in many flavours [Francisco et al., 2015].

Kvass is a soft drink traditional to Eastern European countries, typically produced by fermenting kvass mash with yeast (traditionally *Saccharomyces cerevisiae*); alcohol content in kvass must be less than 1.2% alcohol by volume. Kvass, a non-alcoholic beverage, is produced from rye or dried rye bread by natural fermentation [Lidums et al., 2014]. Kvass quenches thirst, is invigorating and refreshing. Because of the favourable composition of the microflora (lactic acid bacteria, yeast), kvass is enriched with B group vitamins, as well as lactic acid and carbon dioxide; it is a product of incomplete alcoholic and lactic acid fermentation [Omasheva et al., 2015]. Kvass has beneficial effects on the digestive tract; furthermore, energy value of naturally fermented kvass is only 25 kcal (105 kJ) per 100 ml [Lidums et al., 2016], which is about ½ less than in typical soft drinks. Most of the beneficial substances come from the raw materials used in naturally fermented kvass production – rye bread and malt, especially in non-pasteurized kvass.

#### 1.2 Yeast alternatives

There is tremendous diversity among yeasts and the application of modern microbiological and molecular approaches has resulted in renewed focus on the biology and industrial potential of yeasts other than *S. cerevisiae*. Nowadays, an upsurge of interest in providing suitable starter and adjunct cultures for food production has been observed. Many researchers have proposed a variety of cultures as alternatives to baker's yeast, including *Kluyveromyces marxianus* [Plessas et al., 2008]. The dairy yeast *K. marxianus*, described as a homothallic, hemiascomycetous yeast, is phylogenetically related to *S. cerevisiae* and positive for assimilation a wide range of sugars [Lane, Morrissey, 2010]. As a dairy yeast, *K. marxianus* can be grown in cheese whey (lactose fermentation), which is the main by-product of the dairy industry, and its disposal causes serious environmental problem [John et al., 2007]. *K. marxianus* has also been successfully used in bread making instead of baker's yeast [Dimitrellou et al., 2009] and for agave must fermentation in tequila production, showing increased volatile compound

content comparing with a *S. cerevisiae* baker's yeast [Lopez-Alvarez et al., 2012].

Recently, a *K. marxianus* strain has been experimentally grown and studied in a non-conventional dairy product factory in Latvia, therefore additional uses of this yeast in other food sectors have been considered. One of the potential uses could be kvass production, as *K. marxianus* is positive for glucose and sucrose fermentation.

Sensory parameters such as aroma, taste and colour are critical in the acceptance of products; therefore, the aim of this research was to compare physicochemical and sensory characteristics of kvass fermented with *S. cerevisiae* and *K. marxianus*.

### 2 Materials and methods

#### 2.1 Microorganisms

Strain *K. marxianus* DSM 5422 was obtained from Leibniz-Institute DSMZ-German Collection of Microorganisms and Cell Cultures and maintained on agar plates containing 2% glucose and recultivated in semi synthetic medium containing lactose 50 g/L, yeast extract 5 g/L,  $\text{MgSO}_4 \cdot 7\text{H}_2\text{O}$  1.4 g/L,  $\text{KH}_2\text{PO}_4$  1.0 g/L,  $\text{K}_2\text{HPO}_4$  0.1 g/L,  $(\text{NH}_4)_2\text{SO}_4$  5.0 g/L at 30 °C with agitation 180 rpm. The wet cells were harvested by centrifugation at 5000 rpm for 10 min and then were used for kvass preparation.

Dry baker's yeast *S. cerevisiae* from Lallemand Ltd. was used for comparison.

#### 2.2 Kvass preparation

For bread kvass production, the additional materials were used: rye bread rusks (Liepkalni Ltd.), lactic acid bacteria *Leuconostoc mesentericus* (Chr. Hansen Ltd.), beet sugar (Dansukker Ltd.) and dark malt (Liepkalni Ltd.).

Kvass was produced according to Lidums et al. [2016]: for 1 litre of kvass mash, 200 g of rye bread rusks and 2 g dark malt were soaked in 2 litres of hot water (78±2 °C). Bread rusks were left to soak for 3 hours, then the water-bread rusk suspension was filtered (300 microns) and the liquid fraction was cooled down. 1 g baker's yeast (or proportionate amount of wet *K. marxianus*), 2 units of lactic acid starter and 30 % of the estimated quantity of sugar were added to 1 litre of kvass mash. The total quantity of sugar for kvass production is 30 g; therefore 10 g of sugar were added prior to fermentation. The fermentation of kvass mash took 9 hours at 29 ± 1 °C. After fermentation kvass was placed in a refrigeration chamber to cool down to 3 ± 1 °C. After cooling, the remaining sugar was added (blending). Kvass was matured for 12 hours at 6 ± 1 °C (total production time 25 hours). Afterwards kvass was filled in 0.5 l PET bottles and stored at 4 ± 1 °C for 12 hours before physicochemical analysis and sensory evaluation.

#### 2.3 Physicochemical analysis

Kvass quality parameters are defined by the Regulation No 926/2010 "Quality and classification requirements for kvass and kvass (malt) beverage" of the Cabinet of Ministers of the Republic of Latvia. The parameters defined are 1) dry matter content - 3.0 to 14.0 percent by weight, and 2) acidity - 2.0 to 3.5, expressed as ml of 1n NaOH per 100 ml. Active acidity (pH) of kvass samples was measured by a pH meter (Jenway 3510, Jenway, UK) and dry matter (Brix°) by a digital refractometer (DR301-95, Krüss, Germany).

#### 2.4 Sensory evaluation

A total of 30 trained panellists (18 men and 12 women, average age 22 years) from Faculty of Food Technology, Latvia University of Agriculture participated in initial testing of kvass



fermented with *S. cerevisiae* (sample A) and *K. marxianus* (sample B).

As views of consumers are very important, 150 consumers (57% women and 43% men, average age group 25–45) were asked to complete a short questionnaire about their kvass consumption habits and participate in kvass tasting during the Baltics food industry fair 'Riga Food 2015'. 5-point hedonic evaluation (5 – like very much and 1 – dislike very much) was used in order to determine the overall preference of the samples, while line scale showed the intensity of kvass sensory properties (aroma, flavour, acidity, and colour) [Lawless, Heymann, 2010].

## 2.5 Data analysis

The obtained data processing was performed using mathematical and statistical methods with Microsoft Excel v16.0; differences among results were considered significant if  $p$ -value < 0.05. One-way analysis of variance (ANOVA), Tukey's test and independent samples  $t$ -test were used.

## 3 Results and discussion

### 3.1 Physicochemical parameters

Dry matter content in sample A (kvass fermented with *S. cerevisiae*) was  $8.6 \pm 0.1\%$  and in sample B (kvass fermented with *K. marxianus*) –  $7.0 \pm 0.1\%$ . Active acidity (pH) was lower in sample A ( $3.88 \pm 0.02$ ) compared to sample B ( $4.60 \pm 0.03$ ). According to the indexed values of the Regulation No 926/2010, dry matter content and pH value of laboratory produced kvass corresponded to the regulatory scale (experimentally determined conversion factor for pH ~1.8).

### 3.2 Kvass consumption patterns

Consumption of kvass is mainly dependent on the weather outside, as majority of women (52%) and men (27%) drink kvass when the weather is warmer, i.e., during summer months (Fig. 1.).

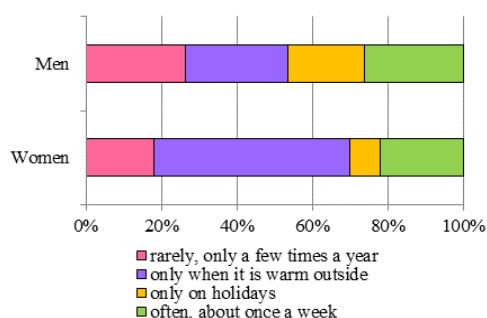


Figure 1: Frequency of kvass consumption

Approximately  $\frac{1}{4}$  of both genders consume kvass once a week and about the same amount of consumers rarely drink kvass. For some men (20%) holidays are the time when they increase kvass consumption. There is a similar amount of consumers of both genders who consume kvass frequently or drink it rarely.

### 3.2 Kvass sensory evaluation

According to trained panellists the overall preference of kvass drinks range from 4.1 – 'like a little' to 5.0 – 'like very much' (Fig. 2). Hedonic evaluation showed that there were not significant differences ( $p > 0.05$ ) between the preference of kvass samples among panellists. Results of consumer evaluation reported considerable preference to kvass sample A ( $p < 0.05$ ), which was within the range from 'like a little' to 'like very much'. Preference of kvass sample B ranged from 3.5 – 'not sure' to 4.0 – 'like a little'. Preference of kvass fermented with *S. cerevisiae* (sample A) between panellists and consumers was

similar ( $p > 0.05$ ), yet consumers liked fermented with *K. marxianus* (sample B) less than panellists ( $p < 0.05$ ).

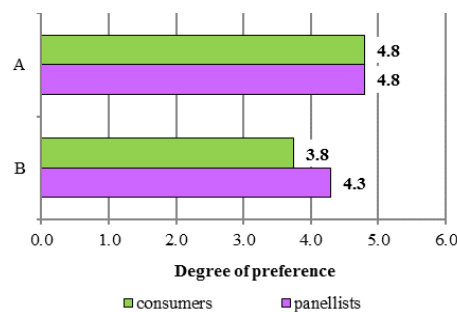


Figure 2: Results of hedonic evaluation of kvass samples

The majority of consumers (56%) reported they would probably not drink kvass with *K. marxianus*, while 15% would not drink kvass with *S. cerevisiae*. 60% of consumers would like to consume kvass with *S. cerevisiae* regularly as it has a more traditional taste. Some consumers liked the aroma, acidity and aftertaste in kvass with *S. cerevisiae*; however others pointed out that it did not have enough acidity, bitterness and  $\text{CO}_2$ . Kvass with *K. marxianus* was reported to have not enough acidity and aroma; it was too light for typical kvass. Children (of consumers) who did not participate in sensory evaluation said that this sample tasted like lemonade.

This brings us to consider soft drink consumption patterns of consumers, as most of the commercially available beverages sold as kvass are kvass drinks made by diluting grain extract concentrates with water and adding colourings, flavours and artificial sweeteners. Kvass drinks are sometimes produced without the use of yeast, therefore carbon dioxide is added artificially for no fermentation has taken place [Lidums et al., 2015]. Naturally fermented kvass is less likely to have the amount of carbon dioxide found in soft drinks with added  $\text{CO}_2$ , as yeast produces lower amounts of longer lasting carbon dioxide during natural fermentation. Therefore, naturally fermented kvass could be preferred less than its rival kvass drinks with high  $\text{CO}_2$  content, if consumers prefer highly carbonated beverages.

In order to evaluate and compare the intensity of kvass sensory properties, line scale was used. Consumer evaluation showed significant differences between kvass sample A and B in terms of flavour and colour ( $p < 0.03$ ) however aroma and acidity of kvass samples was similar ( $p = 0.33$ ) (Fig. 3.).

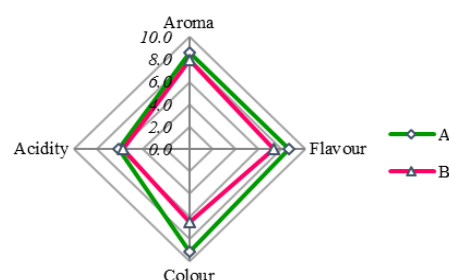


Figure 3: Consumer evaluation of the intensity of sensory properties of kvass samples

Panellists reported considerable differences between colour and acidity of kvass samples ( $p < 0.03$ ), but aroma and flavour were comparable ( $p > 0.26$ ) (Fig. 4).

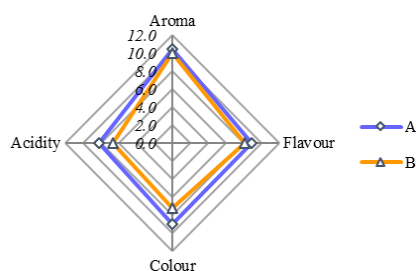


Figure 4: Panellist evaluation of the intensity of sensory properties of kvass samples

Consumers reported that kvass fermented with *S. cerevisiae* (sample A) had a more pronounced flavour while panellists found similar flavour in both samples. Dimitrellou et al. [2009] pointed out that analysis of volatile aroma-related compounds and the amounts of total volatiles in bread samples (breads produced by baker's yeast and *K. marxianus*) were not significantly different. Panellists, on the other hand, noted higher acidity in kvass sample A that is also shown as lower pH value.

Colour intensity differences were reported by both groups of evaluators. Kvass sample A had a darker, more intense colour than sample B. Food colour usually is the first quality parameter evaluated by consumers which is critical in the acceptance of products [Cserhalmi et al., 2006]. However, there are no regulations for kvass colour as it is dependent on ingredients used; it is possible that there were inconsistencies within the colour of rye bread rusks and dark malt, therefore, resulting in various colour intensities of kvass mash.

When comparing intensity of sensory properties evaluated by consumers and panellists of the same kvass sample, sample A showed differences between aroma and acidity intensity (Fig. 6).



Figure 5: The intensity of sensory properties of kvass fermented with *S. cerevisiae*

Panellists reported more pronounced aroma and acidity of kvass sample A ( $p < 0.01$ ), while flavour and colour had insignificant differences among evaluators. As for kvass sample B (Fig. 6), panellists found kvass aroma to be significantly more intense ( $p < 0.01$ ) contrary to consumers. Panellists noted that acidity, flavour and colour of kvass sample B was more distinct, however there was only borderline significance ( $p < 0.1$ ).

Consumer soft drink consumption habits play a great role in preference of kvass samples and intensity evaluation of sensory properties. Differences in consumer evaluation are always linked with psychological and environmental aspects [Lawless, Heymann, 2010].

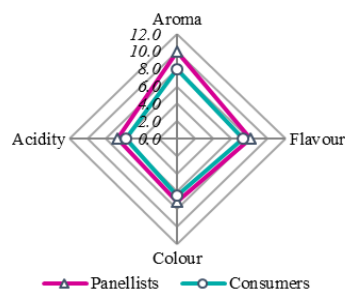


Figure 6: The intensity of sensory properties of kvass fermented with *K. marxianus*

It should be noted that sensory properties of kvass also depend on technological process; therefore kvass produced at a factory could have diverse intensity of sensory properties contrary to kvass produced at laboratory.

#### 4 Conclusions

Dry matter content and active acidity of kvass samples was within the admissible range according to Regulation No 926/2010 of the Cabinet of Ministers of the Republic of Latvia. Consumer consumption of kvass is mainly dependent on the weather outside, as majority of drink kvass when the weather is warmer, while approximately ¼ of both genders consume kvass once a week. Hedonic evaluation showed that there were not significant differences ( $p > 0.05$ ) between the preference of kvass samples among panellists. Preference of kvass fermented with *S. cerevisiae* between panellists and consumers was similar ( $p > 0.05$ ), yet consumers liked fermented with *K. marxianus* less than panellists ( $p < 0.05$ ). Consumer evaluation showed more pronounced flavour and colour in kvass fermented with *S. cerevisiae*, but aroma and acidity of kvass samples was similar. Panellists reported more pronounced colour and acidity in kvass fermented with *S. cerevisiae*, yet aroma and flavour were comparable. The results suggest that *K. marxianus* DSM 5422 could be suitable for kvass fermentation and production; however additional evaluation of kvass produced at a factory should be carried out.

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