

AWARENESS AND PERCEPTION OF MODERNIZED ELECTRONIC PUBLIC PROCUREMENT – CZECH CASE STUDY

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Abstract: In 2014, the EU enacted the Investment Plan for Europe to simplify public procurement, to support access to public procurement and to consider social and environmental criteria as well as the eIDAS Regulation. In 2017, the European Commission launched an Initiative for a more effective, efficient and sustainable public procurement on the single internal market. The aim of this paper is to assess the awareness and perception of the modernized electronic public procurement, i.e. to analyze the roots and situations across the EU as, so far, reported, and to discuss and perform a pioneering Czech case study based on questionnaire investigation focusing on three hypotheses. The presented data and arguments point to a potential which is, due to the reduced transparency and awareness, as yet underdeveloped.

Keywords: Public procurement, Single internal market, competition, Investment Plan for Europe.

1 Introduction

The EU is the latest stage of modern European integration (MacGregor Pelikánová, 2012 & 2013) dominated by the four freedoms, the single internal market, digitalization and other mature society factors (Floridi, 2016) including the (so far unsuccessful) ambition to become the world competitiveness leader (MacGregor Pelikánová, 2017). Its strategy is set for each decade and currently is ending the Europe 2020, i.e. COM (2010) 2020 Communication from the Commission Europe 2020 – A strategy for smart, sustainable and inclusive growth (EC, 2010).

For Europe 2020, definitely important is the fact that a substantial part of the public investment in the EU is done by public procurement. The total amount spent via public procurement exceeds EUR 2 trillion, i.e. oscillates around 15% of EU GDP (EC, 2017). This makes the need for a proper public procurement regime self-explanatory. Therefore, the EU requires all public contracts, above a certain threshold, to be processed by public procurement while observing principles of transparency, equal treatment and non-discrimination.

In 2014, President-elect Jean-Claude Juncker, in his strategic speech 'Setting Europe in Motion' made it clear that the EU needs more synergy in public procurement and specifically stated: "In times of scarce resources, we need to match ambitions with resources to avoid duplication of programs. More than 80% of investment in defense equipment is still spent nationally today in the EU. More cooperation in defense procurement is therefore the call of the day, and if only for fiscal reasons." (Juncker, 2014). Thereafter, the European Parliament and European Council have enacted a collection of measures under the umbrella of the Investment Plan for Europe: Getting Europe Investing Again, aka the Juncker Plan ("Investment Plan for Europe") in the hope of making the investment in the EU more effective, efficient and sustainable and consequently to support the economic growth in the EU and in EU member states (Radulescu et al., 2018). The three objectives of the Investment Plan for Europe are: (i) to remove obstacles to investment, (ii) to provide visibility and technical assistance to investment projects, and (iii) to make a smarter use of financial resources (EC, 2014). The pillars of the Investment Plan for Europe are the European Fund for Strategic Investments, the European Investment Advisory Hub and the European Investment Project Portal, and the Project for improvement of the business environment. With respect to public procurement, the Investment Plan for Europe basically simplifies the EU public procurement legislation, supports access to public procurement and considers social and

environmental criteria (Hochman et al., 2015). Rather than awarding a contract only on the basis of the best price, authorities are encouraged to integrate qualitative criteria, demand innovative, energy saving solutions or insist on sustainable and socially inclusive approaches (EC, 2014). In sum, this should contribute towards economic growth (Terzić, 2017) as well as to corporate social responsibility („CSR“) (MacGregor Pelikánová, 2019a, Pakšová, 2016, Jindrichovska et al., 2019).

In 2017, the European Commission put forward an initiative to carry out procurement more efficiently and in a sustainable manner (MacGregor Pelikánová, 2019a), while making full use of digital technologies (MacGregor Pelikánová, 2019b) to simplify and accelerate procedures under the name 'Increasing the impact of public investment through efficient and professional procurement' ("Initiative") (EC, 2017). The Initiative was a reaction to the Investment Plan for Europe and its drive to support the economic development and the reinforcement of the single internal market. The Initiative defines six priority axis for the fulfillment of the Investment Plan for Europe and in particular addresses the importance of public procurement in EU member states and the fact that the selected providers are almost always from the same EU member state as the public authority. The not fully open, effective and efficient competition in this arena represents one of the obstacles for the complete single internal market. Therefore, it is necessary to launch measures and instruments making sure that subjects from all EU member states can participate in public procurement in each and every EU member state and this pursuant to non-discriminatory conditions. The Investment Plan for Europe and Initiative should lead to the increase of the competitiveness of European businesses, to the elimination of discrimination between competitors and development of the effectiveness, efficiency and sustainability of the competition (Damro, 2012).

All public procurements in the EU must be done in compliance with principles set by the EU law and with the quartet of freedoms. Public procurement calls, proceedings and procedures must satisfy competition requirements, trustworthiness, effectiveness and efficiency. Due to the digitalization and digital single internal market, the electronic communication and other digital aspects need to be properly addressed by public procurement. Consequently, the public procurement policies and legislation overlap with the drive for the intellectual property and digitalization (Vivant, 2016), such as the Electronic IDentification, Authentication and trust Services ("eIDAS") and GDPR setting (MacGregor Pelikánová & Cvik, 2018). Namely, eIDAS is a standardized system of electronic identification and trust services for electronic transactions in the internal single market, which was created by EU Regulation 910/2014 of 23 July 2014 on electronic identification and trust services for electronic transactions in the internal market and repealing Directive 1999/93/EC ("eIDAS Regulation"). The main goal of the eIDAS Regulation is the increase in the trustworthiness of electronic communication in the internal single market and to develop electronic signature, verification and authentication systems (Ribeiro et al., 2018). The eIDAS Regulation should provide a common foundation for safe electronic communication between citizens, businesses and public administration institutions and make the electronic communications, documents and signatures equivalent to their hardcopy counterparts. This should lead to a reinforcement of the effectiveness, efficiency of public and private on-line services and services for e-business in the sphere of public procurement and even beyond. Namely, the eIDAS Regulation imposes the duty to use a higher level of security during electronic communication and to use appropriate information systems and information technologies ("IS/IT") (Pohulak-Zoledowska, 2016). EU member states have to create a common framework for such an e-communication which recognizes electronic identification ("eID") from other EU member states and verifies the correctness and security. What is

the reality about the awareness and perception of the modernized electronic public procurement in the EU and, in particular, in the Czech Republic?

2 Materials and Methods

The aim of this paper is to assess the roots and context of the awareness and perception of the modernized electronic public procurement in the EU, and in particular in the Czech Republic. This aim rests on primary and secondary research linked to the three hypotheses addressing the awareness and perception as reported in other EU member states and in the entire EU and as revealed by the pioneering Czech case study. Particular attention is paid to the attitude of competitors regarding the Initiative, i.e. whether they believe that the Initiative, along with other instruments and the entire framework, contributes to the increase of the effectiveness, efficiency and sustainability of public procurement. Boldly, the ultimate question is whether, according to their opinion, the modernized electronic public procurement has a positive impact on the digital single internal market and the competition in it.

The mentioned three hypotheses are:

- H1 - Respondents are aware about the Initiative of the EU and its goal to increase the effectiveness, efficiency and sustainability of the public procurement?
- H2 - The Initiative of the EU will not have an impact on competition between businesses?
- H3 - Introduction of electronic communication in public procurement is perceived positively.

The employed research methods reflect options implied by the availability of domestic and foreign policy documents, literature, electronic and media resources and the case study. For the theoretic foundations and theoretic part of this paper, the method of description and critical interpretation is applied. For the practical part of the paper, the gathering of information is done by the collection, classification, verification and analysis. The explored resources, to yield this information and process it methodologically, entail the EU and national legislation, political and press releases and academic literature. The heterogeneous and multi-disciplinary nature of the data calls for the Meta-Analysis (Silverman, 2013), while using a holistic approach, a critical comparison of EU and EU member states policies, law and frameworks and confronting the concepts with the reality of the Czech case study. The quantitative research and data is complemented by qualitative research, along with a critical closing and commenting and refreshed by Socratic questioning (Areeada, 1996).

A pivotal aspect of the practical part is the case study, entailing the questionnaire investigation done in the Czech Republic and using the questionnaire, with six half-closed questions and four open questions. The questionnaire was created in the manner to confirm or reject the set hypotheses. In total, 60 respondents were contacted and 42 completed the questionnaire. Therefore, the conditions for using the chi-square were satisfied. Consequently, there was employed the method of questionnaire and forensic investigation, the method of categorical data processing by the software program Statistika and the method of dependence of quantitative signs of Pearson chi-squares (Pearson, 2009). It needs to be emphasized that, for the Pearson chi-square, two dependencies are analyzed via statistical analysis of table's frequencies. In order to confirm or reject each of the three hypothesis (H1, H2 and H3), there was used a support contingency table 2x2, which monitors the dependence between two qualitative signs. This contingency table facilitates the performance of the dependency test with respect to two qualitative values. The set null hypothesis is tested as hypothesis of independency H0. While creating the contingency tables 2x2, there is observed the relation between only two qualitative variables and where each variable has only two categories. The questionnaire search was done in the Czech Republic and with pre-selected competitors who participate in public procurement as interested providers.

3 Modernized electronic public procurement – EU roots and context

The EU framework for the modernized electronic public procurement is implied by primary, secondary and supplementary sources of the EU law and by various policy and strategy instruments. Pursuant to the primary source of the EU law with constitutional features – the Treaty on the functioning of the EU (“TFEU”), the Regulations have a general application, are binding in their entirety and directly applicable in all EU member states (Art.288 TFEU) and so they vigorously penetrate into the national settings (Azolai, 2011), while a very similar effect have the Directives, after the expiration of their deadline for national transposition. Consequently, the eIDAS Regulation is binding in its entirety and is directly applicable in all EU member states since 2016, except for certain provisions which had their application moved to 2014 or 2018 (Art.52 Regulation 2014) and is critical for the materialization of supplementary sources, such as EU strategies, including Europe 2020 (Erixon, 2010; Pasimeni & Pasimeni, 2016, Stec & Grzebyk, 2017, MacGregor Pelikánová & Beneš, 2017, MacGregor Pelikánová et al., 2017), Investment Plan for Europe and the Initiative. It is also necessary to mention SMART elements and their implementation not only in European documents, but also in common practice (Turečková & Nevima, 2018).

It needs to be underscored that the prior EU setting was confronted with a set of crises leading to an insufficient investment across the EU and to the failure of the Lisbon strategy desperately trying to make the EU the world economic leader (MacGregor Pelikánová, 2017). Well, the Lisbon strategy was replaced by a new ten year strategy, Europe 2020 (MacGregor Pelikánová et al., 2017) and, a few years later, the Investment Plan for Europe and Initiative have emerged. They all focus on the single internal market and competition in it (Chirita, 2014), especially in the digital setting (Balcerzak, 2016, Vivant, 2016). Since all, or as many as possible, obstacles need to be removed, then consequently the public procurement has to be modernized and digitalized to take full advantage of up-to-date IS/IT (Zelazny & Pietrucha, 2017), to make the entire process more transparent and simple, while addressing as well sustainability criteria (Sroka & Lörinczy, 2015, Sroka & Szanto, 2018, Cech et al., 2019) such as social and environmental aspects (Dima et al., 2018, MacGregor Pelikánová, 2019a). In sum, public investment via public procurement needs to contribute to the concept of public goods (Czyzewski et al., 2016).

Not only the EU, but as well the United Nations (“UN”) have identified that there is a gap between public services and social needs and that a collaboration across multiple stakeholders is one of the key goals for securing global sustainable development with social, environmental and economic progress and UN Sustainable Development Goals (SDGs) (Berrone et al., 2019). One academic stream strongly litigates for public-private partnership (“PPPs”), while for others PPPs remain a controversial proposition due to the complexity and limitation of current systems (Berrone et al., 2019, O’Shea et al., 2019). In general, the EU decided to opt for the public procurement. Indeed, public procurements have been high on the agenda of policy makers, decision makers, scholars, and the general public in the EU in the last few decades, inasmuch as such procurements make up nearly one-fifth of Europe’s total gross domestic product (Milosavljevic et al., 2019)

Therefore, contracting authorities across the entire EU should show a vigorous commitment to the public procurement and address both quantitative and qualitative aspects in the virtual setting, i.e. consider the smallest price as well as other factors such as innovative, energy saving solutions or insisting on sustainable and socially inclusive approaches (EC, 2017). Interestingly, despite the above indicated EU framework and policies, there have been just a few completed studies comparatively assessing and measuring the effectiveness, efficiency and sustainability of public procurement in EU member states, and this e.g. by using the composite I-distance Indicator (CIDI) methodology (Berrone et al., 2019,

Milosavljevic et al., 2019, Nystrom & Mandell, 2019, O'Shea et al., 2019).

Naturally, the Europe 2020, the Investment Plan for Europe and the Initiative are per se policies and so their objectives and goals need to be carried through by individual law instruments. Similarly, pursuant to the TEU and TFEU, the exclusive conferred competencies of the EU do not extend to the public procurement, and especially if it has a local or strictly national dimension. The eIDAS Regulation is rather an exception in the arena of the modernized electronic procurement, since softer instruments such as Directives and policies, prevail. Namely, there should be underscored a trio of Directives from the same year: (i) the Directive 2014/24/EU on public procurement abolishing the prior Directive 2004/18/EC, (ii) the Directive 2014/25/EU on public procurement in water, energy, transport and mail services abolishing the Directive 2004/17/EC and (iii) the Directive 2014/23/EU on concession granting. This trio, i.e. this general Directive and two special Directives on public procurement should make sure that businesses have a non-discriminatory access to the EU market and benefit by legal certainty as it concerns the governing law.

As a matter of fact, the Initiative represents an attempt by the European Commission to address the Investment Plan for Europe and to fully materialize these three Directives from 2014 and to make the public procurement more effective, efficient and sustainable and the related competition healthier (Radulescu et al., 2018). Within the Initiative, the European Commission sets out six priority axis for public procurement: a) use of innovation, ecological and social criteria (Hochman et al., 2015) with the focus on the complex assessment of the proposed solution, b) professionalization of public contracting authorities, c) improvement of the access of the SMEs to the public procurement on national as well as EU levels, d) increase of the quality of data about public procurement (unified e-forms, public registries), integrity and transparency, e) digitalization of public procurement, and f) setting of the co-operation with public contracting authorities from the entire EU. The pivotal priority axis is the first mentioned i.e. the use of innovation, ecological and social criteria (MacGregor Pelikánová, 2019a & 2019b). Specifically, there is the EU-wide tendering platform TED. In addition, the European Commission launched ex ante a help desk system to assist contracting authorities in public procurement regarding goods or services above EUR 250 million. The help desk system is instrumental in resolving issues and questions related to the selection of the type of public procurement used, setting of the criteria for selection, etc. Projects with a value exceeding EUR 500 million can be consulted with the European Commission.

Due to its well-known organization and IP drive, Germany was expected to be one of the flagship EU member states to carry on the Investment Plan for Europe, eIDAS and Initiative. The results regarding trustworthiness and other digital document issues meet expectations, since Germany has a long tradition of having a focus on the legal certainty in the digital setting (Vogt, 2016) and is the leading state with respect to the eID and the mutual recognition (Andrasko, 2017). In contrast, an analysis of public procurement in Germany and the German use of TED raises serious issues (EC, 2018 & 2019). Although opening up EU public procurement markets and transparency are critical, Germany has one of the lowest values of contract notices published in TED under the EU public procurement legislation. Including utilities, these contracts only make up 1.6% of GDP, compared to the EU average of 4.14% and this may hinder the effective, efficient and sustainable spending of public money and cause German and European companies to miss out on business opportunities (EC, 2018 & 2019). For example, in 2015 the total procurement volume of the German public sector was around EUR 330 billion, of which EUR 170 billion (52%) were allocated to the core- and extra-budgetary activities of the public authorities, and EUR 160 billion (48%) to public entities. Based on the total number of all public procurement procedures (EU-wide or national procedures that were not restricted from the outset to certain participants) in the period 2011 to 2015, 82%

were effected nationally and only 18% EU-wide (EC, 2018 & 2019). There is a myriad of reasons for this, such as laws open to divergent interpretations allowing for circumventing public procurement procedures, especially EU-wide procedures, and an underemployment of the modernized electronic public procurement. This leads to the lack of transparency, as better information can enable a more targeted policy approach when it comes to opening up the German public procurement market.

In contrast to Germany, Ireland showed a strong drive for PPPs with the explanation that it can address more efficiently, and perhaps as well more effectively and sustainably, public needs, especially public infrastructure needs (O'Shea et al., 2019). However recently, a comparative analysis of traditional public procurement and PPP mechanisms has revealed via detailed semi-structured interviews with key stakeholders and an examination of the available documentation a different picture. There was found no evidence that PPP leads to faster delivery or that PPP results in better value for money (O'Shea et al., 2019). Therefore, Ireland works further in the direction of the modernized electronic procurement.

A similar trend can be observed as well in Sweden and there are already some very practical propositions how to improve it, such as the use of unit price contracting ("UPC") forcing potential contractors, aka competing agents to offer corresponding unit prices i.e. the bid is a price vector. Due to the not exclusive drive for the low cost, most often, but not always, the lowest vector sum is awarded the contract. Such a modernized electronic public procurement is transparent and properly addressing the potential problem of unbalanced bidding (Nystrom & Mandell, 2019).

4 Modernized electronic public procurement – a Czech setting and case study

The EU framework for the modernized electronic public procurement is reflected by the Czech law, namely the legal duty to have and conduct the public procurement electronically (4.1). A Czech case study via a pioneering questionnaire investigation reveals that the awareness is low, but once increased, respondents seem to see an impact on the competition and to share a positive perception of the modernized electronic public procurement and to welcome it (4.2)

4.1 Czech compulsory electronization of public procurement

In the Czech Republic, the trio of public procurement Directives from 2014 is reflected by the Czech Act No. 134/2016 Coll., on public procurement ("Public Procurement Act"). The eIDAS Regulation is reflected by the Act No. 297/2016 Coll., on services to create trustworthiness for electronic transactions ("Trustworthiness Act") which, among other things, abolished the Act No. 227/2000 Coll., on electronic signature and took effect on 19 September 2018. The main focus of the Trustworthiness Act concerns the trustworthiness of electronic communications and transactions, including electronic signatures, stamps, seals and documents.

In order to properly follow the strategies from the Investment Plan for Europe and Initiative and further develop the Public Procurement Act and Trustworthiness Act, there was issued a Ministerial Ordinance 260/2016 Coll., on setting detailed conditions for electronic instruments, electronic acts for public procurement and conformity certificate ("Ordinance 2016"). The Ordinance 2016 took effect on 1 October 2016 and especially regulates the access to documents and information via electronic instruments in the sphere of public procurement.

The Ordinance 2016 imposes the duty on all public contracting authorities to make sure that everybody can check the identity of this public contracting authority as previewed by eIDAS Regulation, Trustworthiness Act and Art.3 of the Ordinance 2016. Further, the public contracting authority has the duty to provide potential contractors with a certificate of the public key in order to enable these potential contractors to encrypt the

content of offers. Pursuant to Art.5 of the Ordinance 2016, the public contracting authority can provide such a key either via the profile of the public contracting authority, or the internet page or by sending upon request. The communications between the contracting authority and potential contractors are done either while using hardcopies or electronic versions of documents. The electronization of public procurement is a process requiring full electronic communications with electronic signatures, including the electronic submission of bids. The general rule is that the public contracting authority has the duty to conduct electronic communications and exceptions, such as public procurement for low value goods or services, are set by Art.211 of the Trustworthiness Act. Therefore, since 2018 when the Act 2016 took effect, Czech public procurement authorities have to sign such electronic documents while using a qualified electronic signature (Art.5 and Art.19 Trustworthiness Act). This qualified electronic signature is established by a qualified instrument equipped with an appropriate qualified certificate, unless the law states otherwise.

Basically, there are three types of electronic signatures – a qualified electronic signature, an advanced electronic signature and a simple electronic signature (Art.5 – Art.7 Trustworthiness Act). The highest type is the qualified electronic signature, which is created by a qualified electronic signature creation device, and which is based on a qualified certificate for electronic signatures generated by appropriate IS/IT and hardware devices (Art.3 eIDAS Regulation, Art.5 Trustworthiness Act). In order to create the advanced electronic signature, it is necessary to use encryption and a qualified digital certificate, which is generated by the special hardware instruments and is linked to the qualified trust service provider.

Only the qualified electronic signature is based on the eIDAS Regulation equivalent to a handwritten signature, i.e. it generates the same legal effects in the entire EU, see Art. 25 of the eIDAS Regulation. The qualified electronic signature has the legal effect of a handwritten signed document is unambiguously linked to the signing person, allows the identification of the signatory with a high level of trustworthiness and is so attached to the concerned document that any future tampering or modification of such a document or its data can be discovered by the use of an appropriate crypto algorithm and other standards. In order to create a qualified electronic signature, potential contractors and bidders need to have an issued qualified certificate, private key to be used while signing electronic documents and certified instruments for the creation of such signatures. These certified instruments can be certified chip cards, tokens or certified HSM moduls (external hardware equipment) or remote services for signing via a selected intermediary.

4.2 Czech case study - Questionnaire investigation

At the very heart of the practical part of this paper is the Czech case study, based on the questionnaire investigation addressing the awareness and perception of the modernized electronic public procurement. This is achieved while focusing on the confirmation or rejection of the three hypotheses:

- H1 – Respondents are aware about the Initiative of the EU and its goal to increase the effectiveness, efficiency and sustainability of the public procurement?
- H2 – The Initiative of the EU will not have an impact on competition between businesses?
- H3 – Introduction of electronic communication in public procurement is perceived positively.

As indicated above, the practical part of this paper is built upon the Czech case study with the questionnaire investigation for which was used the method of a questionnaire search and its consequent assessment by the method of categorical data by the software program Statistika, by the method of dependence of qualitative signs and Pearson's chi-square, where two dependences are analyzed by the static analysis of tables frequency. The level of significance was set as $\alpha=0,05$. The conditions for the use of the chi-square were satisfied ($n>40$).

For the confirmation or rejection of each of the set hypotheses, there was created a supportive contingency table 2x2 to observe the dependence between two qualitative signs. Based on contingency tables, there is performed the test of dependency which will be performed to assess the relationship between two values. The set null hypothesis is tested as the hypothesis of the independence H_0 . Within the created contingency tables 2x2, there is observed the relationship between two qualitative variables where each variable has only two categories. Categories of the respondents were determined by the number of employees of the respondents. The questionnaire investigation was made in the Czech Republic while working with 60 pre-selected businesses which compete for public procurements, i.e. are bidders. Since 42 of them have completed the questionnaire, the conditions for using the chi-square were satisfied.

Pursuant to H1, respondents are aware about the Initiative of the EU and its goal to increase the effectiveness, efficiency and sustainability of the public procurement. H_0 means that between the indicated signs there does not exist the dependency, i.e. the respondents are not aware about the Initiative of the European Commission. The feedback of respondents regarding H1 is included in Table 1.

Table 1: contingency table for H1

Number of employees	Yes, they are aware	No, they are not aware	Total
0-49 employees	5	22	27
50 or more employees	5	10	15
Total	10	32	42

Source: Prepared by authors

The value of the Pearson chi-square is $X^2 = 1.166$. The level of significance is $\alpha=0,05$, i.e. $X^2_{0,05(1)} = 3,841$. Since the value $X^2 < X^2_{0,05(1)}$, H_0 – the null hypothesis is confirmed. This means that between the indicated signs there does not exist the dependency, i.e. the respondents are not aware about the Initiative of the EU and its goal to increase the effectiveness, efficiency and sustainability of the public procurement. Therefore, H1 is rejected. All respondents who indicated their lack of awareness about the Initiative were informed about it so that they could fully participate to address H2 and H3.

Pursuant to H2, the Initiative of the EU will not have an impact on competition between businesses? H_0 means that between the indicated signs there does not exist the dependency, i.e. the Initiative will have an impact on the competition between businesses. The feedback of respondents regarding H2 is included in Table 2.

Table 2: contingency table for H2

Number of employees	Yes, it will not have an impact	No, it will have an impact	Total
0-49 employees	15	12	27
50 or more employees	10	5	15
Total	25	17	42

Source: Prepared by authors

The value of the Pearson chi-square is $X^2 = 0,494$. The level of significance is $\alpha=0,05$, i.e. $X^2_{0,05(1)} = 3,841$. Since the value $X^2 < X^2_{0,05(1)}$, H_0 – the null hypothesis is confirmed. This means that between the indicated signs there does not exist the dependency, i.e. the Initiative of the EU will have an impact on the competition between businesses and H2 is rejected.

Pursuant to H3, the introduction of electronic communication in public procurement is perceived positively. H_0 means that between the indicated signs there does not exist the dependency, i.e. the introduction of the electronic communication in public procurement is not perceived positively. The feedback of respondents regarding H3 is included in Table 3.

Table 3: contingency table for H3

Number of employees	Yes, it is perceived positively	No, it is not perceived positively	Total
0-49 employees	25	2	27
50 or more employees	14	1	15
Total	39	3	42

Source: Prepared by authors

The value of the Pearson chi-square is $X^2 = 7.977$. The level of significance is $\alpha = 0.05$ tzn. $X^2_{0.05(1)} = 3.841$. Since the value $X^2 > X^2_{0.05(1)}$, H_0 – the null hypothesis is rejected. This means that between the indicated signs exists the dependency, i.e. H3 is confirmed – the respondents perceived the introduction of electronic communication in public procurement positively.

The performed questionnaire investigation reveals that the respondents are not aware about the Initiative of the EU to increase the effectiveness, efficiency and sustainability of public procurement in the single internal market. However, once informed, they are of the opinion that this will have an impact on the competition between businesses and that, very likely, businesses from other EU member states might get interested in previously only “national” public procurements. The enlargement of the pool of potential contractors should contribute to the healthy and more vigorous competition and ultimately to the increase of the quality of presented bids and of concerns for social, environmental and other aspects and conditions. Further, interestingly, the majority of the respondents welcomed the introduction of the electronic communication and generally electronic forms and procedures in public procurement. They believe that this will simplify the processes and make the communications faster and more effective and efficient. A few respondents, generally SMEs and foreign businesses, were reluctant and they explained their lack of enthusiasm for modernized electronic public procurement by the fear regarding IS/IT demands and complications related to the transfer to the electronic form. However, this is not an issue for the majority of respondents because they already use data boxes and qualified electronic signatures and the related IS/IT is affordable for them, sometimes even the costs are merely marginal. The respondents are not afraid that the Initiative will lead to unfair commercial practices and, as a matter of fact, 92% of the respondents do not expect any unfair competition impact of the Initiative.

5 Conclusion

The study, analysis and assessment of the roots and context of the awareness and perception of the modernized electronic public procurement in the EU and in particular in the Czech Republic provides a very interesting picture. On one hand, there is the EU determined to go for the integration and single internal market, providing a framework for the modernized electronic public procurement and generating ambitious policies and instruments, such as the Europe 2020 or the Investment Plan for Europe with the goal to simplify public procurement, to support access to public procurement and to consider social and environmental criteria accompanied by the digitalization promoting Initiative and eIDAS Regulation. On the other hand, the message does not seem to go smoothly through and be warmly embraced by the EU member states and their contracting authorities. The EU proclamations regarding the fight against discrimination in public procurement and regarding more effective, efficient and sustainable competition are alluring and EU policies and Directive wording appears positive. However, they are not well-known and well-incorporated in the national settings. As before, public procurement keeps its local or national character and national frameworks, policies and contracting authorities want “their own particular” modern electronic public procurement, i.e. they do not go for the EU template. This is suggested by academic literature, the so far

completed studies, and numbers about materialized and finalized public procurement.

The Czech pioneering case study with the questionnaire investigation fits in this fragmented picture. Czech respondents are not aware about the key pillars of the EU modernized electronic public procurement and, as a matter of fact, they know very little, if anything, about the Initiative of the EU and its goal to increase the effectiveness, efficiency and sustainability of the public procurement and so they make the H1 to be rejected. However, once they learned about the EU modernized electronic public procurement and its EU and Czech parameters, they expect that it will have an impact on the competition between businesses, i.e. this rejects H2 proposing the lack of impact on the competition. Even more interestingly, they perceive positively the introduction of electronic communication in public procurement, i.e. this confirms H3.

In sum, both academia, published studies and articles, as well as the primary pioneering case study suggest that the EU is heading in the right direction and might achieve in sharing the same tenor with EU member states and their contracting authorities while enjoying a good reception by potential contractors. However, so far, we are not there. As a matter of fact, the fine potential of the modernized electronic public procurement seems to be underdeveloped. Electronization, transparency, employment of more criteria with the sustainability focus, etc. are proper concepts and steps, but, boldly, Europeans know very little about these endeavors of the EU and if they do know, they do not fully trust them. Naturally, the ambiguity of the used legislative language and policy wording undermines further EU attempts for the modernized electronic public procurement. It can be speculated that there are other factors working against them, such as national protectionism, cultural differences, language barriers, etc.

Certainly, this introductory comparative analysis and rather small sample case study needs to be expanded and deepened in order to make the above suggested preliminary semi-conclusion more robust. Nevertheless, already at this point, it can be legitimately proposed that the EU should work more closely with EU member states, national competition authorities and contracting authorities and should engage in a dialogue with potential competitors. The bottom-up approach and open-minded exchange of opinions should be carefully examined and the EU should humbly recognize how far it can go with the modernized electronic public procurement while keeping the general support. Once these common denominators are identified, a very clear framework and policies should be issued. Primarily, the modernized electronic public procurement should be what EU member states and their businesses and individuals want, or at least are ready to accept, and not what the EU wants. Otherwise, proclamations about more integration, a single internal market and more effective, efficient and sustainable competition without any discrimination will remain beautiful dead letters.

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Primary Paper Section: A

Secondary Paper Section: AE, AG, AH