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**MEASURING THE EFFECTIVENESS OF PUBLIC
PROCUREMENT**

Doctoral (PhD) thesis

THESIS BOOKLET

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1 RELEVANCE, AIM AND TOPIC OF THE RESEARCH

The possibility of improving the efficiency, effectiveness and transparency of public procurement systems is a constant concern of the governments and international development organisations. In recent years, performance management has become a key element of public sector management in modern countries and a growing number of developing countries are attempting to introduce organisational or individual performance measurement to help public sectors' organisations meet the continuously increasing demands. Developing effective financial management system and supporting procurement systems that support is one of the biggest and most important challenges, not only for developing countries, but all.

It is estimated that worldwide, public sector organisations purchase more than \$9.5 trillion worth of goods and services each year, equivalent to almost 13% of global GDP (in Hungary, this figure was 4.7% in 2012, and is stable at over 7% from 2019. (KH, 2020) Public procurement therefore plays a significant role in the economies of states. According to the OECD database, among the 22 OECD-EU countries for which data are available, public procurement has increased from 13.7% of GDP in 2019 to 14.9% of GDP in 2020. Therefore, public procurement plays a significant role in the domestic economy, and the improvement of the public procurement process can be a key driver for increasing the efficiency of public budgets, and spends.¹

Based on the most common understanding, the effectiveness of procurement can be created by a competitive situation during procurement, which aims to reduce costs, but cost reduction is only one of the possible, basic tool. Better, more efficient procurement, demand management and the use of modern technology can lead to further significant cost savings in the public sector.

The public money spent on public procurement and the fact that this money comes from the collected taxes, makes accountability and transparency more important. Therefore, a well-functioning procurement system based on transparency, competition, economic efficiency, effectiveness and accountability is critical to good economic governance and good stewardship of public resources, to improving the efficiency of public spending in reducing poverty, and to increasing public trust in government. Inadequate management and control of procurement, and

¹OECD Library: *Size of Public Procurement*, 2021. Source: <https://www.oecd-ilibrary.org/sites/18dc0c2d-en/index.html?itemId=/content/component/18dc0c2d-en>. [Download date: 20.07.20.2022.

failure to properly manage systems, can lead to significantly worse outcomes and consequently increase public indebtedness, reduce available resources, and in extreme cases increase poverty and diminish the social and economic rights of citizens.

Properly managed public procurement (planning, implementation, control), can significantly support national development, improve resource mobilisation, help to manage public debt efficiently, improve public expenditure management, boost national revenue generation and reduce economic and financial dependency.²

The value for money principle should be complementary and supporting fundamental base principles of public procurement, with efficiency, effectiveness, competition, accountability, transparency, ethics and continuous improvement as.

To ensure the expected results from public procurement, continuous monitoring and evaluation of public procurement is essential. As with all other activities, performance measurement and evaluation is a warning, diagnostic and monitoring system to track economy (retrospective), efficiency (current organisational process), effectiveness (output).

The evaluation of procurement should not be limited to statistical data and possible financial performance indicators, but should also measure and evaluate intangible performance elements such as the quality of goods and services procured, timely execution of orders, customer satisfaction, reliability, flexibility and quality of employees.

Performance measurement is also important to help public sector organisations to make sure that they are achieving their goals and making the best use of their resources. It is also an important area for accountability, as organisations are accountable to the public for their activities. Stakeholders, especially those who directly or indirectly fund the activities of the organisation, have a legitimate interest in whether the resources provided to them are used efficiently and effectively.

Performance evaluation in the public sector is particularly complex and challenging due to complex hierarchical organisational systems, a high degree of legal regulation, external factors outside the control of the organisation, or because the results are often not immediately visible and assessable, often only after years.³

Despite the fact that the performance evaluation of the procurement function has been addressed by researchers for decades, the prevalence of its use, the available knowledge on how the

²MAMIRO Reginald G.: *Value for Money, the Limping Pillar in Public Procurement* - Experience from Tanzania. Source: <http://ippa.org/IPPC4/Proceedings/01ComparativeProcurement/Paper1-2.pdf>, [Accessed 11.12.2018], p.2.

³NAO: Performance measurement by regulators. 2016 November. Source: <https://www.nao.org.uk/wp-content/uploads/2016/11/Performance-measurement-by-regulators.pdf>, [Accessed 13.12.2018], p. 4.

procurement process can contribute to improving the performance of the procurement function is still incomplete

Measuring procurement performance is fraught with difficulties. One reason is that there is no comprehensive definition of what procurement performance is. Another is that it is difficult to distinguish and quantify the different elements of procurement. An expanded understanding of procurement has a very broad scope, which increases the proportion of difficult to quantify objectives enormously, and thus, in addition to being difficult to measure, makes it difficult to separate the impact of the performance elements.

The procurement function is the broadest definition, encompassing tactical and strategic sourcing, and buying, and encompassing the entire chain between internal customers and suppliers, including the organisation, suppliers and the procurement process. Tátrai and Vörösmarty highlighted five factors that determine procurement performance:

- the suitability and performance of the product or service purchased,
- the supplier's performance,
- the performance of the purchaser,
- the performance of the procurement process,
- the performance of the purchasing organisation.⁴,

Purchasing performance is defined by Weele as the extent to which the purchasing function can achieve its predefined objectives with a minimum sacrifice of resources (e.g. costs).⁵ He proposes four dimensions through which procurement performance can be measured and evaluated. These are:

- price/cost dimension,
- product/quality dimension,
- logistical dimension and
- organisational dimension.⁶

The aim of this dissertation is to explore which performance measurement indicators can be used to measure and evaluate the performance of the procurement function, which directly

⁴VÖRÖSMARTY Gyöngyi - Tátrai Tünde: *Beszerezés*. 2016. Wolters Kluwer Kft. ISBN: 978 963 295 614 5, DOI: 10.55413/9789632956145.

⁵WEELE van Arjan.: *Purchasing and Supply Chain Management*, 7th Edition. 2018. 2018. cengage learning, 2018. ISBN: 1473749441, 9781473749443, p. 66.

⁶WEELE van Arjan: *Purchasing and Supply Chain Management: Analysis, Strategy, Planning and Practice*. 2010, Cengage Learning, ISBN: 978-1-4080-8846-3

contribute to the improved performance of the procurement function, improving the procurement efficiency and procurement effectiveness of the procurement organisation. The research covers both procurement and public procurement, as the adequacy of both types of procurement contributes to improving the performance of the procurement function.

In defining the procurement function, I have also used Weele's definition of the procurement function as being extensive:

- to assess whether a company should choose to make or buy
- define the procurement specifications (quality and quantity) for the goods and services required
- selecting the best possible supplier and developing the best procedures for it
- preparing and conducting negotiations with the supplier, concluding agreements and legal contracts with the selected supplier
- placing an order with the selected supplier or developing and improving efficient ordering processes
- monitoring and controlling the order to ensure supply
- monitoring and evaluation (complaints management, keeping product supplier files up to date, supplier rating).⁷

The above definitions of procurement performance are complemented with the specificity of the Bouckaert public sector performance evaluation model to strengthen the systems approach in defining the framework of analysis. In the case of the public sector, the design of an integrated performance evaluation system should take into account all possible areas of added value for citizens. The evaluation system should be designed to provide adequate information on the state of procurement and its evolution in order to maximise its contribution to the achievement of welfare objectives. The model uses three dimensions of performance to assess performance: effectiveness, economy and efficiency.

The thesis is primarily concerned with the evaluation and measurability of efficiency, bearing in mind that efficiency is only one of the determinants of performance, and therefore the study also covers aspects of effectiveness and economy. These are not considered separately but as a system.

The EU public procurement directives ensure consistency in the main rules of the public procurement system. The Hungarian Law on Public Procurement⁸ (later also Kbt.) sets out the

⁷Ibidem, p. 8.

⁸ Act CXLIII of 2015 on Public Procurement

requirements for the efficiency of public procurement, such as transparency in public procurement, speeding up and simplifying procedures, reducing the administrative burden on businesses, promoting the success of small and medium-sized enterprises, creating more competition and promoting value for money public procurement.

EU rules make public procurement control mandatory in all Member States, but it is up to each Member State to set the exact rules. Domestic control covers both documentary and process control during and after the procedure.⁹ However, the 'rigour' of the system and the administrative burden seem to be more of a barrier to the effectiveness of public procurement. In the area of public procurement, it is important to introduce and apply new, more efficient and effective procurement techniques. However, the uptake of these techniques is hampered by the lack of widely available indicators, used in a measurement framework, to monitor the effectiveness and progress of public procurement. Current public procurement statistics do not give a picture of how much real added value is created by the solutions used in a given procedure, nor do they measure the extent of actual savings or missed opportunities.

By measuring the effectiveness of public procurement, public procurement could: become more transparent, ensuring a broader and deeper service to the public.

The use of measurement tools and databases can help to increase the efficiency of public procurement, act as a motivation tool for public purchasers to adopt better techniques and procedures, and as a monitoring and control tool to help measure, analyse and improve public procurement activity. With a comprehensive public procurement performance measurement system, the effectiveness of public procurement activities becomes measurable and transparent, even through the widespread implementation of daily, continuous measurement of procurement effectiveness, and the measurement of the activities of public procurement officers can reduce accusations of corruption and increase the recognition of public procurement professionals.

2 RESEARCH METHODOLOGY AND HYPOTHESIS

The research design is composed of secondary and primary elements and uses both quantitative and qualitative methods, i.e. a mixed methodology.

⁹NYIKOS Györgyi - SOÓS Gábor: *The Impact of the Public Procurement Control System on the Hungarian Public Administration*. In - PRO PUBLICO BONO - Hungarian Public Administration, 2017/4, pp.144-168., ISSN 2063-9058, p.134.

In the case of mixed methodologies, the aim is to combine and use quantitative and qualitative methodologies together, and thus to enable a better, broader interpretation of the phenomenon. The specialty of mixed-methods research is precisely that it attempts to combine the richness and exploratory nature of the qualitative approach with the focus, quantifiability and generalisability of quantitative approaches. Underlying the approach, of course, is the assumption that different 'qualitative' data can be combined, treated together in a single study, to the benefit of both approaches.¹⁰

The primary aim of the secondary data collection and analysis was to provide an adequate literature base for a qualitative analysis of the assumptions by reviewing and systematising the national and international situation and literature.

In addition to the specifics of public procurement, the thesis also provide an overview of the public sector itself and the organisations relevant to the topic. The first chapter outlines the problem and defines the broader conceptual framework. For the first part the best fit was the quantitative method, which involves the use of document analysis, primarily web content analysis, as this methodology can provide a comprehensive and general picture of existing public procurement benchmarking systems and the range of indicators used.

The two research phases build on each other, thus the results of the first quantitative research were used to develop the second phase, the qualitative phase. The exact content of the questions in the second phase was based on the results of the quantitative phase.

Performance management can be interpreted at many levels (macro, micro and meso), which are interdependent and therefore not completely separate, but my research focuses primarily on indicators suitable for measuring performance of public procurement at the organisational level. In the next step the conceptual framework of performance and efficiency were defined. As performance management itself is a very broad concept, only the segments relevant to the thesis is presented from the extensive literature. The definition of effectiveness, economy and efficiency is an essential basis for the further stages of the research. These concepts were first developed in the competitive sector and have been transferred from there to the public sector, so I have dealt with the interpretation of both segments. The same interconnectedness characterises the development and functioning of procurement (general competitive sector) and public procurement performance measurement systems, so in this chapter I deal with procurement, its concept and history, the procurement performance measurement, its benefits,

¹⁰DÉN-NAGY Ildikó - GÁRING Zsuzsanna - KIRÁLY Gábor: *Mixed methodological approaches. Theoretical and methodological foundations.* In - Culture and Community, V. (2.). pp. 95-104. ISSN 0133-2597, p. 96.

the conditions that a well-functioning procurement performance measurement system must meet, the methods that can be used and briefly the performance measurement indicators that can be applied. Public procurement benchmarking relies heavily on the experience of the competitive sector and a brief review of this was considered essential to set the basis for the next chapter, which will deal more specifically with the efficiency and performance of public procurement. International surveys (both global and area-specific) help to understand the basis of the performance evaluation systems already in place and tested, and provide a snapshot of the current situation in countries. An overview of public procurement reforms in developing countries highlights the key process elements and areas through which the efficiency of the lagging countries can be most effectively improved. The analysis includes a presentation of relevant EU evaluations, published annually by the European Commission in the form of a single market scoreboard. This scoreboard already includes public procurement specific indicators.

The aim of the questionnaire survey is to identify the indicators through which public procurement practitioners in Hungary see the most feasible way to measure the performance of public procurement, and in particular to measure and improve efficiency. The study not only identify the possible indicators that are considered most necessary to achieve the desired situation, but also evaluate the current situation.

The questionnaire contained 26 closed and 1 open questions. The questionnaire was structured in 3 parts. The first general part (4 questions) asked about the respondent's place and role in public procurement, which in fact allowed a description of the surveyed population. The second part (17 questions in total) contained questions to help explore the current operational framework of public procurement departments. In this section, questions were asked about the public procurement organisation itself, its operational environment and the public procurement strategy, which explored the practical approach to the current situation. This section was not compulsory for all respondents, but was only completed by professionals who work in a relevant organisational context. Those working in the field of education, legal aid or consultancy could skip this section without completing it, given that these questions are not relevant for them. Therefore, in the analysis, there are cases where $n=107$ is replaced by a smaller value.

In the third section (6 questions), there were questions aimed at assessing possible indicators of public procurement performance and identifying the most appropriate indicators to increase efficiency.

Several types of questions have been used in the questionnaire, taking into account the possibility of later analysis. In most cases, respondents were given the opportunity to answer on a Likert scale, but there were also multiple-choice questions with a ranking.¹¹

The only open question asked about the indicators used by the respondent's purchasing organisation, in addition to the mandatory reporting. I note that out of 107 assessable responses, only eight respondents wrote a response to this question, two of which said that this question was not asked or not relevant to their organisation. Overall, 5.6% of respondents wrote only to the relevant indicators, and interestingly, 4 responses were from the large business sector and 2 from government. A taxative list of responses is as follows: savings rate; efficiency (2x); number of procedures with the same subject matter; lead time; turnaround time; use of KPIs.

Public procurement professionals made up the majority of the survey. The aim of the survey was to collect as complete a set of data as possible, which could provide a basis for the widespread use of descriptive statistics.¹² The questionnaire was designed and the sample selected with the aim of obtaining as broad a sample as possible, both from the side of the bidders and the bidders. The research was not random but was based on expert selection, which allowed qualitative analysis to be carried out.¹³

¹¹ BABBIE, Earl: *The Practice of Social Science Research*. 2003, Balassi Publishing House, ISBN 978-963-456-000-5, pp. 192-194.

¹² TÓTH Eszter Zsuzsanna: *Quantitative Methods of Management*, Budapest Akadémiai Kiadó, 2018, p. 26.

¹³ BONCZ Imre: *Research methodology basics*. Pécs, 2015 - ISBN 978-963-642-826-6, p. 28.

3 HYPOTHESES AND AIM OF THE DISSERTATION

Existing efficiency indicators, measurement options and procurement performance measures provide the basis for the possibility of creating a set of measurement indicators. This requires a detailed analysis of national and especially international procurement indicator systems. Regardless of whether a given set of indicators measures performance at national, organisational, project level or has been created on a topic-specific basis, an examination of its indicators will highlight the areas through which the performance of public procurement can be best improved.

My basic hypothesis is that there is empirical evidence that international indicator systems and recommendations for the performance evaluation of public procurement are primarily focused on increasing efficiency. (H1)

My objective is to collect and systematically examine the range of public procurement performance measurement's indicators used by international organisations' and recommended by the literature. Also aimed to examine the objectives and indicators through which the performance and efficiency of public procurement can be measured.

In many cases, international public procurement benchmarking systems contain specific indicator recommendations. Collection and systematization of the database can help public procurement organisations to select the most appropriate indicators. My aim is to create a set of recommendations for procurement indicators at the organisational level, based on recommendations and documents from international organisations and literature, which fit Bouckaert's public sector performance model.

I conducted a primary research on the comparison of the different indicator systems in the period February - March 2021 by reviewing the national and international literature. The aim of the questionnaire research is to support or refute the following hypotheses.

I assume that the level of maturity affecting the organizational efficiency of public organizations appearing in domestic public procurement is lower than the level of maturity of private actors participating in public procurement. (H2)

In order to underline or refute this hypothesis different domestic purchasing organisations sectors' maturity levels were compared, based on the identified possible indicators from literature, of organisational public efficiency. The aim of the study is to examine whether and the maturity level of the public sector's actually lags behind of the private sector's (SMEs and

large enterprises) procurement participants. The analysis is carried out by processing my own primary research. The analysis is carried out by processing my own primary research.

I assume that in domestic public procurement practice, formal compliance (procedure, legal requirements) is more prominent than compliance with efficiency indicators. (H3)

I seek to answer the hypothesis by exploring the views of domestic professionals, prioritising the importance of indicators that can be used to assess legal compliance and to evaluate performance, by processing the data of my primary research. The aim is to investigate whether the economic objective of procurement (value for money principle) or legal compliance is the primary importance in domestic organisations, additionally, whether other strategic and performance objectives are given priority.

I assume that, regardless of the type of organisation, in domestic public procurement practice, in addition to efficiency indicators, the pursuit of effectiveness and other social and socio-political objectives are relegated to the background. (H4)

This hypothesis is tested from two angles. On the one hand, by exploring the views of domestic practitioners on the relevance and applicability of efficiency, effectiveness and economy indicators in measuring organisational performance by processing primary research data. Secondly, I targeted to explore during the primary questionnaire research, to reveal the importance of the above objectives in domestic public procurement practice. Additionally, target was to determine which objectives can be used to increase efficiency and performance (facilitating the participation of small and medium-sized enterprises in the public procurement process, sustainable development, social objectives of the state, aspects of social responsibility) and which objectives can be most achieved in public procurement, based on the opinions of participants.

Finally, I looked at the possibility of improving performance. I have assumed that **to increase the performance of domestic public procurement, regardless the type of the organization, the primary objective is to increase efficiency, for which the best tool is to increase relevant expertise. (H5)**

My primary objective here, was to explore the views of domestic professionals on the possible directions of performance improvement, to identify and present the most important tools, and to identify possible differences between sectors.

4 SUMMARY AND CONCLUSIONS

H1:

In the context of the first hypothesis, I examined whether it can be empirically supported that international indicator systems and recommendations for the performance evaluation of public procurement focus primarily on increasing efficiency, which assumption was confirmed by the indicator systems examined.

I used document analysis for the study, and methodologically grouped the objectives of existing indicator systems according to keywords that showed the main areas for performance improvement. Efficiency was identified as a key objective in 62% of the indicator systems examined. The results of the document analysis confirmed that international indicator frameworks and recommendations for performance evaluation in public procurement focus primarily on improving efficiency. In addition to efficiency, increasing transparency and competition are also of paramount importance, but the primacy of the role of efficiency improvement is unquestionable. **(T1)**

In many cases, the international public procurement performance evaluation systems contain specific indicator recommendations. The collection and systematisation of the data represents a gap-filling database, that can help public procurement organisations to select the most appropriate indicators and to develop the best to fit indicator system.

The 435 possible procurement performance indicators, collected during the document analysis, can be grouped and mapped to the elements of the Bouckaert public sector performance model. For each element of the model, i.e. resources used, transformation process, products and services created, outputs and their direct consequences and final indicators, an indicator measuring and evaluating public procurement performance can be identified. The developed set of indicators can be used as a recommended starting point for the development of a set of indicators for any procurement organisation involved in public procurement.

H2:

The evaluation was based on the answers to nine sets of targeted questions. The questionnaire assessed the current comparison level of maturity of public procurement organisations through strategy, transparency, type of procurement, strategic importance of procurement, existence and quality of procurement rules, content of procurement plan, contract management, type of procurement work and expertise. Based on the comparison of the current maturity levels of

domestic procurement organisations by sector, as identified in the literature and related to organisational efficiency, the maturity level of the public sector differs only partially from the maturity level of the private sector (SMEs and large enterprises). Based on the processing of my own primary research, the public sector is on a more mature level than SMEs, while it is at a less mature level than large enterprises, rather closer to the maturity level of large enterprises.

(T2)

There is an important linear relationship between the maturity level of the procurement function and its performance. The results suggest that the weakest type of organisation in terms of procurement performance, which is essentially focused on legal compliance within a traditional framework. By mapping the maturity level of domestic organisations, the current situation can help to better tailor programmes to improve organisational effectiveness to the baseline situation.

In terms of transparency, the responses clearly show that the public sector has a clear preference for the legal framework, and that the main aspects that determine the objectives of procurement performance are: legal nature, day-to-day tasks, and the priority of traditional procurement elements, rather than efficiency and effectiveness. In large companies, and especially SMEs, private interests prevail more thus the value for money principle is more prevalent. In the public sector, among the elements that represent value add functions, those that contribute to the implementation of efficient procurement, such as conducting procurement taking into account full life-cycle costs, green and social procurement, supplier evaluation and development, innovation-friendly procurement, quality and risk management, are very low priority in the current operational framework. In the public sector, contracts are monitored, but the evaluation of their implementation is already lagging behind the performance of the private sector and the re-use of information is less, thus clearly lagging behind the private sector.

H3:

In the third hypothesis, I assumed that in domestic public procurement practice, formal compliance (procedural rules, legal requirements) is more important than compliance with efficiency indicators. In order to examine whether the efficiency objective of procurement (value for money principle) or legal compliance is of primary importance in domestic organisations, or whether other strategically and performance relevant objectives are given priority, I used two questions from the questionnaire survey. On the one hand, the answers to the question on organisational character and, on the other hand, the weight of value-adding activities in public procurement organisations were determined. During the two questions, I

explored the views of domestic professionals on the importance of legal compliance and other indicators that could be used to assess public procurement performance. The obtained result shows that, compliance with legal rules appears significantly more prominent than the importance of realizing the value for money principle or the fulfillment of other policy and sustainability goals. It was therefore established that in domestic public procurement practice, formal compliance (procedures, legal requirements) appears as a primary aspect, thus compliance with efficiency indicators during public procurement procedures is currently pushed into the background. **(T3)**

Compliance with regulation is key, but it must be pursued in conjunction with the economic objective of public procurement. Making strict compliance the only fundamental requirement and fearing legal redress can make contracting authorities risk-averse and can lead to a neglect of economic, financial, green, social and innovative considerations. Overall, the aim should be to ensure that the legislative framework provides sufficient certainty and, at the same time, sufficient freedom and flexibility for contracting authorities to take the above-mentioned aspects into account.

H4:

The fourth hypothesis was supported by the analysis of the answers to the questionnaire; first, I explored the views of domestic experts on the importance and applicability of efficiency, effectiveness and economy indicators in measuring organisational performance. Then I created a situational perception of the assessment of the public procurement indicators collected from the literature and explored the range of indicators most suitable for increasing efficiency.

The ranking of the indicators analysed (43) shows that, apart from compliance with legislation and the number of court cases and complaints (also linked to legislation), all other performance indicators are ranked at the bottom of the list, regardless of the evaluated sector. Not only efficiency indicators but also indicators related to cost-effectiveness are considered by national experts to be more important than effectiveness indicators.

The weighted average result also confirms the primacy of efficiency. This approach shows that the perception of economy and efficiency is almost the same, while effectiveness lags behind the previous two categories. The other social and socio-political objectives (facilitating the participation of SMEs in public procurement procedures, sustainable development, the social objectives of the State, aspects of social responsibility) are clearly overshadowed by the methods used.

Based on the results obtained, it can be concluded that in the practice of public procurement in Hungary, effectiveness indicators are overshadowed by efficiency and economy indicators, as well as other social and socio-political objectives. Effectiveness indicators (employee safety, welfare of the country's inhabitants, number of cross-border procurements, unemployment, etc.) are at the bottom of the list of priorities and their role in current domestic practice can therefore be considered negligible. **(T4)**

It can also be concluded also that the promotion of the participation of small and medium-sized enterprises in public procurement, sustainable development, the social objectives of the state, social responsibility and value for money are negligible in domestic procurement practice. Both in the ranking of indicators and in the possible means of improving performance, the above objectives were ranked at the bottom of the list by the respondents, irrespective of the sector. The compliance of procurement projects, quality, is much more important in the process of domestic public procurement, i.e. purchasers from the definition of procurement strive for quality performance (identified with legal compliance) and price and other value added objectives are less important for them.

For the public sector, economic, social impacts and compliance should be balanced. However, the results obtained show that neither the value for money principle nor the social utility principle is adequately reflected in the public sector, only compliance, which seems to work to the maximum.

H5:

In the fifth hypothesis, I assumed that to improve the performance of domestic public procurement, the primary objective is to increase efficiency, the best way to do this is to increase relevant expertise. The verification of this hypothesis was again done in several steps, based on an aggregated analysis of 4 questions of the questionnaire.

When averaging the rankings given by the whole population, the domestic experts ranked efficiency at the bottom, followed by transparency, then effectiveness and finally economy.

In response to the question on which areas a good public procurement performance measurement system should focus on most, experts believe that a well-functioning domestic public procurement performance measurement system should focus primarily on the compliance of procurement projects (on time, legally compliant, of sufficient quality) and the quality of the goods/services purchased. All other possible focus areas have a mention share below 10%, i.e., customer satisfaction, type and number of procedures, cost of resources used (economy), operational cost of the procurement department and compliance with the required

processes, efficiency of suppliers and supply chain are all areas that are considered by domestic professionals to be less important for performance improvement. Looking at the responses by sector, the top three rankings are the same, while the rest of the ranking shows some variation. While in the public administration sector the cost of resources used is quite important, in the other two sectors this indicator is ranked much lower. For large enterprises, customer satisfaction and the adequacy of the procurement project are also prominent, while for the other sectors they are ranked lower.

According to the opinion of domestic experts, the most relevant of the three aspects of performance is efficiency, i.e. it is through increasing efficiency that the performance of domestic public procurement can be best improved. And the primary means of improving performance was clearly identified as increasing expertise, the right level and quality of expertise. **(T5)**

5. NEW SCIENTIFIC RESULTS AND FURTHER CONCLUSIONS

5.1. New scientific results

The strength of the dissertation is that it strives for a kind of systematization, and thus, primarily in relation to the literature, it can offer something new. The new scientific results revealed in the thesis can be summarized as follows:

1. Comprehensive, comprehensive, gap-filling summary and comparative analysis of existing public procurement indicator systems and their main areas in the Hungarian language.
2. Criteria for the development of a possible set of performance indicators for public procurement, in line with the Public Sector Performance Model.
3. Examining and illustrating the similarities and differences between the public and private sectors in terms of procurement and purchasing performance, and primarily efficiency.
4. Identify the constraints to improving the performance of public procurement organisations and possible means to improve efficiency.

5.2. Further conclusions , recommendations, practical use of research results

Based on the results of the questionnaire survey, several further conclusions and findings can be drawn, and the identification of the public procurement profiles (fe. identifying strengths and weaknesses based on each aspect) of each sector (actors such as public sector, SMEs and large enterprises) can be targeted as a possible area of research. In order to improve the performance of domestic public procurement organisations, more emphasis should be put on the implementation of efficient procurement. Based on the responses received, there are indications of progress, but further incentive programmes towards value for money procurement should be introduced.

The existence of professional capacity is also an important topic. On the one hand, respondents rated the existing professional knowledge highly, and on the other hand, they also identified the need to increase the expertise and skills of public procurement staff as the primary means to improve performance. This suggests that the professional training adapted to the current legal

framework is of a high standard and results excellent professionals. However, the skills and training currently available are not sufficient to make public procurement more efficient, effective and economical.

The research suggests that neither the level of organisational maturity nor the skills of the professionals are yet sufficient to properly apply the main objective of public procurement, namely best value for money, in the public sector.

The results also show that much more emphasis should be placed on policy objectives. These are currently not among the most important objectives. Promoting the uptake of sustainable development and socially inclusive procurement can improve the quality of public procurement.

The general application in public procurement of the full life-cycle model, well known in the competitive sector, could lead to further significant reductions in costs and public expenditure, thereby promoting economic and social development. The use of a life-cycle approach to public procurement projects is currently less widespread in our country. However, responsible public procurement in line with EU requirements can only be achieved through the widespread use of this technique. The potential for savings is greatest with this approach, and its frequency should be increased in the coming years.

Both the sustainability approach and the widespread application of the best value for money approach are slowly unfolding in practice, which cannot be attributed to compliance with the legislation, especially since the "value for money principle". The consideration of value for money and price-cost, life cycle assessment and the practical implementation of sustainability are treated as strategic aspects in the national public procurement act and its implementing regulations, as in the 2014 directives. On the surface, therefore, there is no conflict between the legislation and the quality objectives set out in the thesis, but the results of the research show that these are not being properly applied in practice.

The use of the freedom of procurement described by Andrea Gyulai-Schmidt could be an appropriate solution. "Procurement freedom means that contracting authorities are free to define the subject of their procurement according to their needs and ideas. Contracting authorities enjoy a wide margin of discretion in determining the characteristics of the products to be procured, since public procurement law does not regulate what should be procured, but how it should be done. However, freedom of procurement cannot, by its very nature, be unlimited. The principles of equal opportunity, fair competition and transparency, as well as the requirement of responsible management, are among the fundamental principles of public procurement that

have a restrictive effect. The principle of equal opportunities can be a strict limitation on the freedom to procure and thus on the application of ecological criteria, which are often more expensive in the short term. Similarly, the principle of sound and responsible management may have a moderating effect on the attitude of contracting authorities towards increased quality requirements. Better quality, even if it does not directly include sustainability aspects, generally entails a higher financial cost, which, especially in the case of EU-funded procurement, should be considered in such a way that it does not give rise to a legal remedy or, if it does, that the contracting authority's conditions and decision on the quality criterion pass the test of proportionality based on the principle of equal opportunities."¹⁴

The dissertation points out that it is impossible to determine in one general way, with one overall valid definition for every organization, when we can consider procurement effective, and it is even more difficult to make a general indicator recommendation. While the economic, sociological, political and legal environment (if we consider only our country) is completely the same, many other factors, such as the type of organization (SME, large company, public sector). The style and way of managing the organization, the available data and resources are different, and these factors also greatly influence, what can be considered effective for the given organization. Furthermore, the economic environment changes also has influence and impact on performance and performance indicators. In a period of recession, much more emphasis is placed on cost savings and elements related to the financial performance of the organization/company/state, than in a period where financial resources are more freely available. As a result, whatever indicator system is created within an organization, it must be stable enough to be able to measure and evaluate progress, but it must be also flexible enough to be able to modify during changing challenges. The effectiveness of public procurement is influenced by the market environment (maximizing competition, achieving socio-economic goals and fulfill government demands), the legal environment (procedural, contractual legislation, personnel regulations, research and development regulations, production regulations and financial regulations) and political pressure. Together, these represent a kind of external effect, but in each case they have an impact on organizational efficiency and the development of performance measurement.

¹⁴GYULAI-SCHMIDT Andrea: *Ecological aspects in Hungarian and German public procurement procedures*. 2017. In Koltay et alii.: *Ad Astra Per Aspera* pp. 215-256. ISBN: 9789633083048. Source: http://jak.ppke.hu/uploads/collection/207/file/SoltPal_kotet_2017.pdf, pp. 226-228.

In my opinion, public procurement can be considered effective if it enables quality and on time procurement, enables the realization of (not only corporate) objectives, ensures long-term planning, takes sustainability aspects into account and does not focus exclusively on cost savings, but takes into account the value for money principle, ensures real - clean competition, which is based on transparency and, last but not least, ensure traceability.

In order to develop effective public procurement, it is essential that the organization has a suitable procurement strategy and policy aligned with the goals, goals settled in top to down mode, linked with appropriate performance measures and process guidelines, both at individual, group and organizational level. At a higher level, the right legal environment is essential, which ensures an optimal balance between freedom and security, but also gives the right direction for every stakeholder. The right environment makes it possible to maintain or achieve a corruption-free environment, enables public procurers to choose the most appropriate procedure, enables quality RFPs to be issued, and also provides a suitable basis for good measurability. Furthermore, the rationalization of the order of inspections promotes the development of greater awareness and a sense of security.

The issue of applied/applicable metrics is further complicated by the fact that certain contradictions can already be found even in the basic principles. For example, case of price and quality (if the price is too important, the quality may decrease, while if the quality is important, the price may be higher), the contradiction between the speed of procedures and the fair procedures (procedures must be carried out as quickly as possible , but at the same time it must be ensured that the procedure is fair and provides an opportunity for all bidders to participate), consideration of sustainability aspects (there can be a conflict even in the field of green and social public procurement, but, for example, the interest in innovative procurement can be in complete conflict, both with both social and green objectives). Finding the right balance is essential for achieving good public procurement performance. I would also add the case of open competition. Open competition between bidders is the easiest way to ensure that public bodies, and ultimately society as a whole, get the best contract. Numerous scientific publications support that open competition has a significant and positive impact on government efficiency and value for money in procurement.

The most frequently cited author (Gupta S.) found that 6-8 bidders are required to achieve the highest competitiveness, and further increase in the number of bidders does not affect the final

price.¹⁵ However, in the case of a large number of bidders, the duration, complexity and cost of the procedures may increase. Furthermore, even with open competition and an adequate number of bidders, a lower price or better quality can only be achieved if there are companies that are able and willing to really compete. Therefore, in order to improve the efficiency of public procurement, it becomes important that the procedures are properly planned and contain rules that reduce the number of unnecessary offers, but at the same time ensure a sufficient number of bidders for the development of appropriate competition.

When developing an effective public procurement indicator system, financial performance cannot be the only metric, and I do not recommend the use of very general, high-level indicators either. Intangible performance elements such as the quality of procured goods and services, the timely fulfillment of orders, customer satisfaction, reliability, flexibility and the quality of employees, specifically defined sustainability indicators, must all be taken into account when developing an appropriate indicator system. It is also important that rules and definition of the established indicators is clear, and the method of calculation is precisely defined. The goals and results of the purchasing organization must be transparently communicated, to all parties involved.

I already referred to it several times in my dissertation, but I consider it of utmost importance to ensure the proper education and training of professionals. Adequate training helps professionals choose the most appropriate procurement method, prepare the appropriate documentation, and manage procurement processes efficiently. During the procurement process, there are many interested parties, stakeholders, that directly or indirectly participate or are involved in the procurement process. Ensuring adequate communication and information flow between these parties is also essential in order to increase purchasing efficiency.

The practical utility of the thesis can be seen in the extensive and relevant literature review, which examined and presented a wide spectrum of efficiency-performance-efficiency indicators, and in the opportunity to review the situation and overall performance of public procurement procedures in Hungary, based on a high number of primary research items, which, although not representative, provides an opportunity for organisations to review their procurement policies for better performance. Furthermore, the innovative nature of the thesis provides an opportunity for further analysis of individual sub-topics, and mapping and analysis of the "why" would be another important research direction.

¹⁵ GUPTA S.: *Competition and collusion in a government procurement auction market*. 2002., Atlantic Economic Journal, Springer; International Atlantic Economic Society, vol. 30(1), pages 13-25., DOI: 10.1007/BF02299143

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5 SCIENTIFIC CV OF THE AUTHOR

Katalin Erdei-Derschner is a graduate student of the Doctoral School of Public Administration of the National University of Public Service, graduating in January 2021.

The doctoral candidate was born in June 1982, and after finishing primary school he continued his secondary school and university studies in Budapest. In 2006, he graduated from the Budapest University of Technology and Economics, Faculty of Economics and Social Sciences, with a degree in Economics, majoring in Business Administration.

He has 16 years of extensive professional experience in procurement with several international companies (Reckitt Benckiser, Honeywell, ABInbev) and currently works at Mondi Békéscsaba Kft. as Global Sourcing Category Manager.

She started her doctoral studies in 2016 at the University of National Public Service, Faculty of Public Administration and Management.

Doctoral School of Science, his research focuses on measuring the effectiveness of public procurement.

The doctoral candidate will have an intermediate level of English and German, with an economical professional intermediate level extension

To complement her studies, she qualified as a SixSigma Green Belt in 2008, as a chartered accountant in 2012, as a Public Procurement Officer in 2018 and as an official supplier auditor (Quality Austria) in 2020.

During his doctoral studies, he published several scientific publications related to his research topic, including five scientific journal articles (one in English in a foreign journal, one in English in a Hungarian journal, and three in Hungarian in a Hungarian journal), one book chapter in Hungarian and one conference paper in Hungarian. Two of the above list have been co-authored with his subject leader Dr. György Nyikos.

Also related to her research topic, she has given several presentations at scientific conferences in Hungarian and English.