EFFICIENCY IN AWARDING OF SMALL-SCALE PUBLIC CONTRACTS: THE CASE OF THE CZECH ARMED FORCES

Radka Lopourova
University of Defence, Brno, Czech Republic
E-mail: radka.lopourova@unob.cz

Jan Hudak
University of Defence, Brno, Czech Republic
E-mail: jan.hudak@unob.cz

Jana Svecova
University of Defence, Brno, Czech Republic
E-mail: jana.svecova@unob.cz

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Abstract

The award of small-scale public contracts in the Armed Forces of the Czech Republic (CAF) is transparent thanks to an information system called the National Electronic Tool (NET). The tender documentation, competitors and the results of the procurement procedure are among the most important data that are published in this system. The main goal of the paper is to find critical points in public procurement in the CAF through an analysis focused on 3 178 small-scale public contracts being awarded in 2020. Pareto rule and ABC analysis were used to find commodities, services and works being procured with the highest frequency during 2020 in the CAF. Within these public contracts, the types of procurement procedures, numbers of tenders, length of award procedures and reasons for their extension were examined. Then, a SWOT analysis was applied in combination with questionnaires and multiple criteria evaluation of the CAF experts to find efficiency gaps related to the process of small-scale public contracts awarding in the NET system. Proposals to improve the efficiency of public procurement are focused on training staff responsible for small-scale public contracts awarding in military units. Based on the SWOT analysis, this aspect was identified as the most important weakness from the perspective of military units' practitioners.

Key words: efficiency of public procurement, Czech Armed Forces, National Electronic Tool

1. INTRODUCTION AND LITERATURE REVIEW

Public procurement in the Czech Armed Forces (CAF) is based on three main levels of legislation:

- level EU,
- level state,
- level contracting authority (Ministry of Defence - MoD).

Level EU means that the Czech public procurement system is based on the EU directive 2014/24/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014 on public procurement and repealing Directive 2004/18/EC. The directive focusing on the above-treshold public contracts and sets out general rules for EU member states regarding public procurement.

Level state is represented by the Act on public contracts. The Act deals with above-treshold public contracts, as well as below-treshold public contracts, has the section dedicated to the military sector, but does not include a detailed approach in case of the small-scale public contracts' awarding.

The main rules for small-scale public contracts' awarding in the CAF are contained in two MoD internal guidlines.

Military units' commanders are responsible for small-scale public contracts' awarding in the context of decentralised procurement. This means that they work with unit's budget and their subordinates prepare and organize purchasing of goods, services and public works with an estimated value of less than 2 million CZK, excluding VAT.

National Electronic Tool (NET) is an information system used by the Czech contracting authorities to manage public procurement. Each contracting authority has its special profile on this website, where all basic data on public procurement is accessible not only to potential suppliers but also to the general public.

Contracting authorities should publish the following documents and data in the NET system:

- tender documentation,
- deadline for submission of tenders,
- explanation of the tender documentation for economic operators,
- publication of the result of the award procedure,
- publication of the contract document (worth over 500 000 CZK).

Specialists for the decentralised procurement can choose the type of award procedure based on the MoD internal directives. The following procurement procedures are most commonly used:

- direct communication/procedure,
- general procedure,
- open procedure.

Direct and general procedures can be managed without the NET system (table 1).

The open procedure is applied to the estimated values between 750 000 and 2 million CZK excluding VAT. In practice, however, it is used as the most transparent way of public procurement for almost all purchases.

In some situations, the internal guidelines of the MoD are stricter than state-level legislation (table 1).

Table 1. Small-scale public contracts: financial limits on the state and on the MoD level

Procurement procedure	State level	MoD level
Direct communication (DC)	DC < 100 000 CZK	DC < 50 000 CZK
General procedure (GP)		50 000 CZK ≤ GP < 100 000 CZK
Close procedure (CP)	100 000 CZK < CP < 750 000 CZK	50 000 CZK ≤ CP < 750 000 CZK
Open procedure (OP)	750 000 CZK ≤ OP < 2 000 000 CZK	750 000 CZK ≤ OP < 2 000 000 CZK
	NET > 500 000 *CZK*	*NET* ≥ 100 000 *CZK*

Source: authors' representation based on Government Resolution No. 467 of 21 June 2017 on imposing the obligation to use NEN in public procurement and MINISTRY OF DEFENCE NORMATIVE ORDER No. 60 of 12 December 2017

Electronization of public procurement is one of the trends not only in the Czech Republic but also in the CAF. It can help increase the transparency of the process, the number of potential suppliers and, ultimately, speeds-up information and material flows concerning stakeholders. Based on the experience of experts, the electronic system that they have to use when procuring goods and services, also has its negatives. Therefore the research focuses on the NET system and the possibilities of its improvement in connection with the logistical aspects of purchasing.

Most scientific papers published in the world's citation databases in the last five years focus on public procurement and possibilities of increasing the efficiency in terms of the above-treshold public contracts, especially public works' contracts. Contracting authorities and their tenderers come mainly from the civilian environment.

Inefficient public procurement and its reasons focused on prices of contracts and measures related to overpricing prevention are analysed in (Grishmanovskii et al., 2020). Research in the partial centralization and growth of the professionalization of the procurement system aiming at public works' contracts is carried out in (Chiappinelli, 2019). The author recommends increasing the level of centralization of purchases due to the higher competencies of employees. An appropriate procurement strategy focusing on supplier early involvement and long-term cooperation was investigated in Sweden and the Netherlands (Eriksson et al., 2019). The authors emphasize the importance of long-term cooperation with suppliers in the framework of infrastructure projects, which reduces tendering costs and increases efficiency of public procurement.

Factors influencing the length of awarding procedure in terms of public works' contracts in the Czech Republic were analysed in (Placek et al., 2019). In the public

process, the contracting authority faces the problem of meeting contradictory objectives that is to comply with strict public procurement rules, and at the same time, fulfil its needs as quickly as possible with the smallest transaction costs (Placek et al., 2019, p. 314). According to the results of this study, the contract price and the duration of the procurement procedure are not related. However, the nature of the contracting authority, the expected value, the openness of the procurement procedure, and the method of evaluation have a statistically significant impact on the length of the contract. As for other factors regarding the length of awarding time, the use of the subcontractor, the division of a contract into parts, and a review by the Office for the Protection of Competition extend the time required (Placek et al., 2019, p. 313). The authors also support the creation of long-term partnerships between contracting authorities and suppliers, which can speed-up the entire process and reduce transaction costs. This article was a major inspiration for conducting research on small-scale public procurement in the CAF.

The reasons of procurement procedures' extensions were analysed in (Gallego et al., 2021). Based on their findings, the researchers applied two different machine learning models to predict the possible inefficiency and corruption in public procurement in Colombia. These instruments can help practitioners reduce these risks in public procurement worldwide.

The possibilities of using block chain in public procurement and transformation of public contracts into smart contracts were analysed in (Debono, 2019). The author suggested the use of block chain to verify the performance and trustworthiness of suppliers. Thanks to smart contracts, it should be possible to automatically penalize suppliers for breach of contract.

Measures increasing the competitiveness of public tenders were identified in (Borowiec, 2017). Facilitating access to information on tenders, with the exception of unreliable entrepreneurs and improving the appeal process through establishment of a specialized court belong to the most interesting issues of the paper. The vision of the components of the public procurement performance evaluation system is given in (Pysmenna et al., 2019). The analysis of selected characteristics on filing petitions with the regulators of public tenders was conducted in (Placek, 2017). Authors examined the reasons why the tenderers submit proposals to the competition regulator's office which included the size of public contracts, the choice of evaluation criteria, openness of the tender and the type of the contracting authority. These types of proposals are rare in case of small-scale public contracts.

The effectiveness of public procurement in the armed forces was analysed only in (Chapela et al., 2019). The authors dealt with the determinants of cost savings in the field of public services procurement. By using a flexible nonlinear regression model of savings, they found that savings rise proportionally to the cost estimate. The research team proposed restrictions on negotiated contracts as this may reduce competition and lower number of bidder can decrease probability of savings in service contracts prices. Authors also examined the weight of the price criterion set before the process of tenders' evaluation. They assumed that a reduction of 10 percentage points in the weight given to price in the award criteria reduces savings in the neighbourhood of €5600–€7700, i.e., by approximately 2% of the average cost estimate (Chapela et al., 2019, p. 679).

Staff training in the field of public procurement was discussed in (Nkwanyana, Agbenyegah, 2020). The authors analysed the level of knowledge related to supply chain management from the public sector perspective. Supply chain management led to increased efficiency in public procurement, but there is still a lack of training for responsible employees in this area. (Dzuke, Naude, 2017) conducted research on improving delivery services in Zimbabwe. They examined all phases of the public procurement process from preparation, advertising, bids' evaluation, award and conclusion of the contract. Insufficient training of the evaluation team members in procurement, lack of knowledge in procurement ethics and lack of expertise in tender evaluation were highlighted as the most important risks in the tender evaluation phase. Recommendations to include public procurement in the curricula of universities and to continue with refreshment courses in this field are involved in the paper.

Based on the above mentioned results of the literature review, it can be assumed that research problems related to the factors which can influence the length of the award procedures and analysis of weaknesses of the electronic systems being used in the small-scale public procurement were not discussed in the world's citation databases during the last five years.

The two main research questions were created based on the literature review gaps and discussions with small-scale public procurement experts in the CAF:

- Which parameters of procurement procedures fundamentally influence their length within small-scale public contracts being awarded in the CAF?
- What are the main weaknesses of the NET system operation?

2. METHODOLOGY

During the first phase of the research, 3178 small-scale public contracts awarded in 2020 in the CAF were selected from data available in the NET system and analysed in relation to the following aspects:

- code of the subject-matter of the public contract,
- deadline for submission of tenders,
- number of tenders,
- date of conclusion of the contract,
- length of the procurement procedure,
- changes in the tender documentation and their reason,
- time for evaluation of tenders, winner announcement and objections of tenderers against the decision of the contracting authority.

Pareto rule and ABC analysis were used to determine the groups of commodities that were most frequently purchased. Then, for these groups of commodities, selected characteristics of descriptive statistics were calculated for the following random variables: length of the tender procedure, number of bids, deadline for submission of tenders, time for evaluation of bids. Histograms were used to graphically represent

the frequency of occurrence of individual random variables and scatter diagrams were applied to express the relationships among these variables.

In the next phase of the research, analysis of strenghts (S), weaknesses (W), opportunities (O) and threats (T) was applied to find the most important inefficiencies in the NET system operation in the CAF. The research was based on semi-structured interviews with the specialists for procurement in the CAF. The questions for the interviews were prepared in advance by the authors of the paper, and one of the authors then implemented them in practice. The experts came from four different military units of the CAF, they were employees of acquisition departments, the head of logistics and in one case a purchasing specialist of a supplier who focuses on trading with MoD via the NET system. A total of 6 experts were selected. Factors for the SWOT analysis were identified according to the results of interviews with experts.The weight of each criterion/factor of the SWOT analysis was determined by the method of one hundred points allocation and the points were assigned on the basis of a 5-point scale questionnaire. Point 1 means the lowest satisfaction (dissatisfaction for weaknesses and threats) of the specialist with meeting the criterion, 5 points means maximum satisfaction (dissatisfaction for weaknesses and threats). The partial evaluation is the result of the formula:

$$PE = W_i * P_i \quad (1)$$

where:

PE – partial evaluation,

W_i - weight of each criterion,

P_i – points assigned to each criterion.

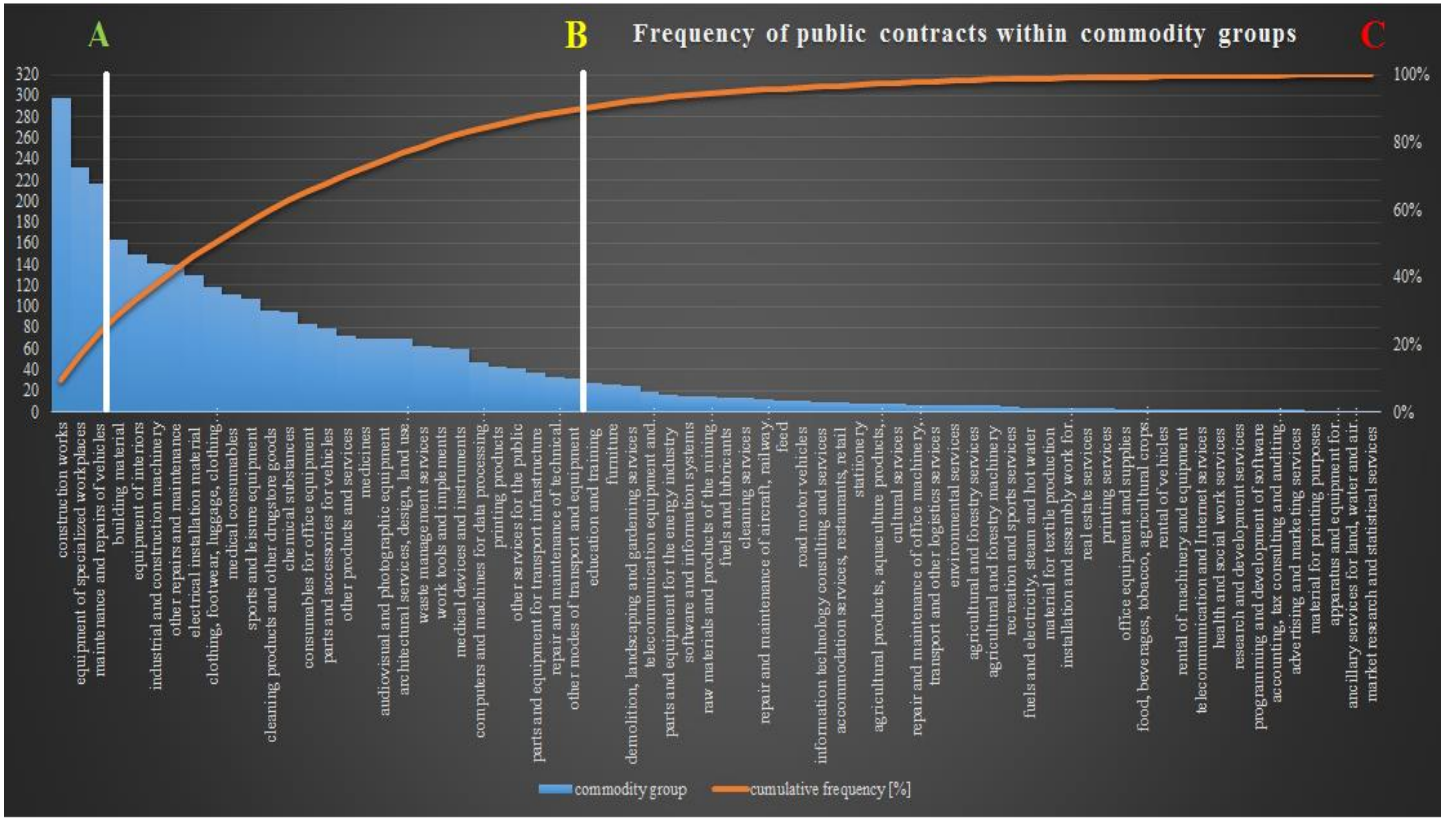
The overall rating is the sum of the sub-ratings for each group S, W, O and T.

All the above methods were used to answer two research questions set out in the first part of the paper.

3. RESULTS

Acquired commodities were divided into 70 commodity groups for further comparisons. The Pareto diagram was created based on the comodity division and ABC analysis was performed to show the frequency of procurement within the particular commodity group (figure 1). Public works were identified as a commodity purchased with the highest frequency in 2020 (298 public contracts, 9%). The second was the equipment of specialized workplaces (232 contracts, 8%) and the third vehicles' repairs and maintenance (217 contracts, 7%). The cumulative absolute frequency of these three groups is 23,5% which, based on the principles of ABC analysis means, that the group A represents 4,3% of the number of commodity groups (3 out of 70), but 23,5% of the total number of contracts. This is the reason why A group of commodities was examined in more detail.

Figure 1. ABC analysis of the small-scale public contracts in the CAF awarded in 2020



Source: authors

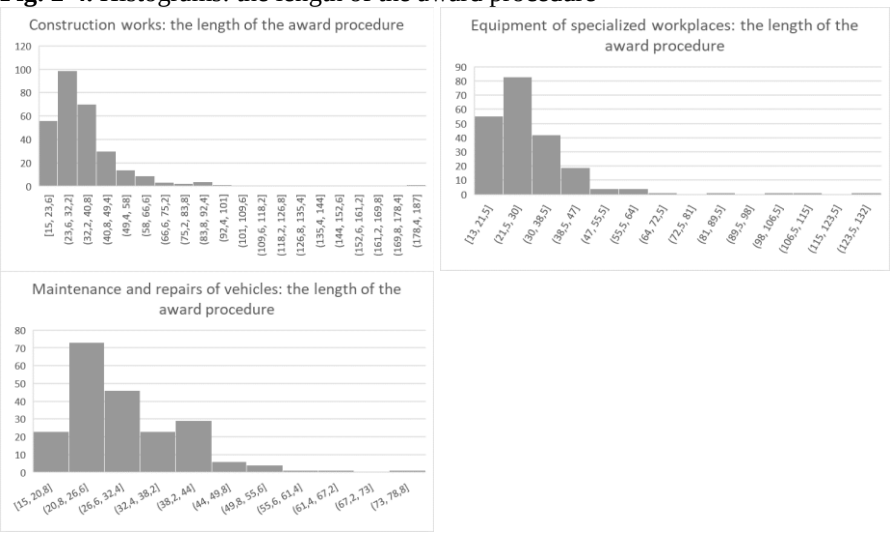
Public works, equipment of specialized workplaces and maintenance and repairs of vehicles were analysed in terms of the length of the procurement procedure and factors which may influence it. If we took a closer look at the length of procurement procedures from the descriptive statistics point of view, the results were as follows (table 2, fig. 2-4):

Table 2. Descriptive statistics: length of the procurement procedure in days

Commodity group	Mean	Mode	Median	Min and max	Var.	SD	Skew.	Kurt.
Public works	34,78	33	31	<15;180>	261,09	16,19	3,55	23,46
Equipment of specialized workplaces	30,03	29	27	<13;129>	206,42	14,4	3,37	16,85
Maintenance and repairs of vehicles	29,63	21	27	<15;76>	94,14	9,73	1,21	2,18

Source: authors

Fig. 2-4. Histograms: the length of the award procedure



Source: authors

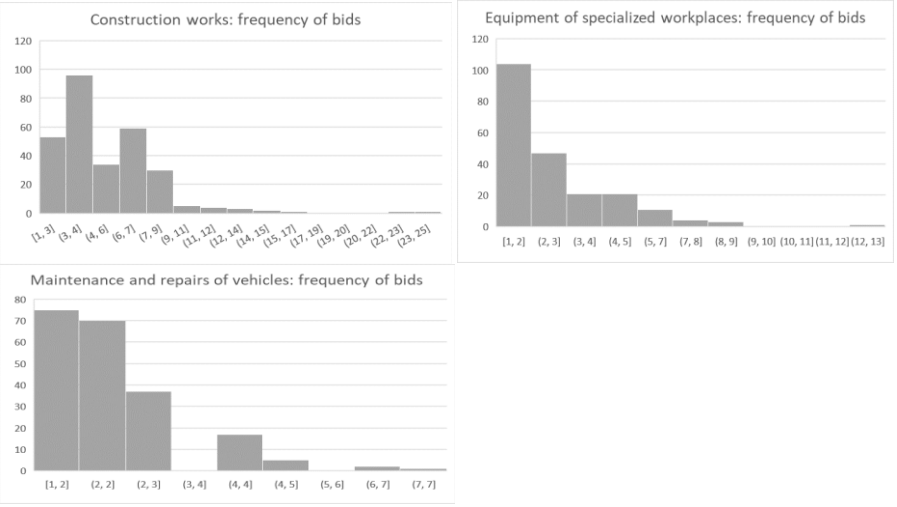
A detailed statistical survey of the frequency of bids for each public contract within the examined commodity groups was performed (table 3, fig. 5-7):

Table 3. Descriptive statistics: frequency of bids expressed in number of tenders per each contract

Commodity group	Mean	Mode	Median	Min and max	Var.	SD	Skew.	Kurt.
Construction works	5	3	4	<1;24>	9,56	3,1	2,03	7,79
Equipment of specialized workplaces	3	1	3	<1;13>	3,36	1,84	1,43	3,73
Maintenance and repairs of vehicles	2	1	2	<1;7>	1,35	1,16	1,21	1,64

Source: authors

Fig. 5-7. Histograms: the frequency of bids



Source: authors

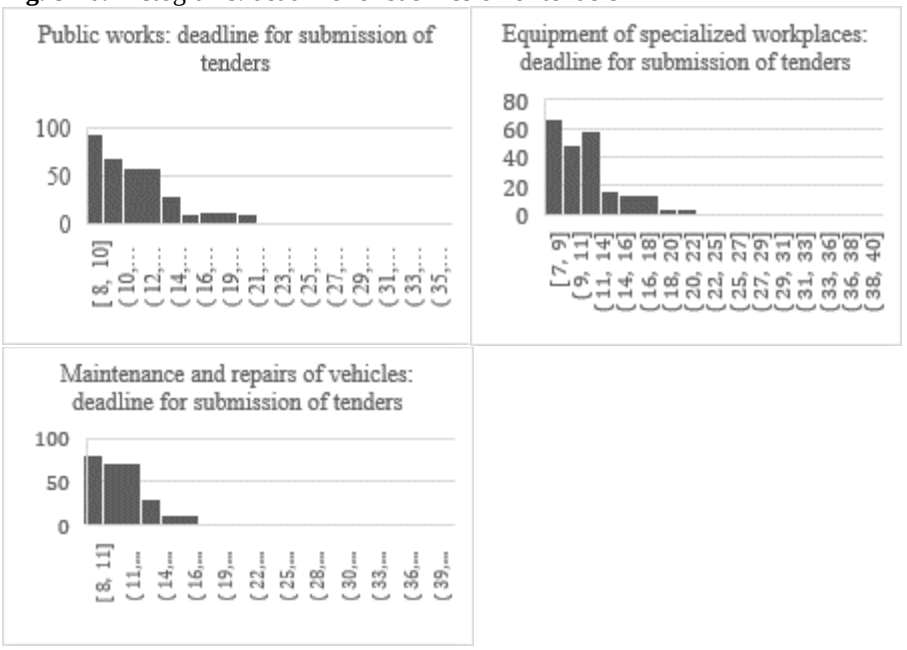
Results related to the deadlines for submission of tenders were as follows (table 4, fig. 8-10):

Table 4. Descriptive statistics: deadline for submission of tenders in days

Commodity group	Mean	Mode	Median	Min and max	Var.	SD	Skew.	Kurt.
Public works	13	9	12	<8;36>	15,94	3,99	1,73	4,82
Equipment of specialized workplaces	12	9	11	<7;39>	14,52	3,82	2,75	13,19
Maintenance and repairs of vehicles	12	9	11	<8;39>	22,61	4,77	2,83	10,57

Source: authors

Fig. 8-10. Histograms: deadline for submission of tenders



Source: authors

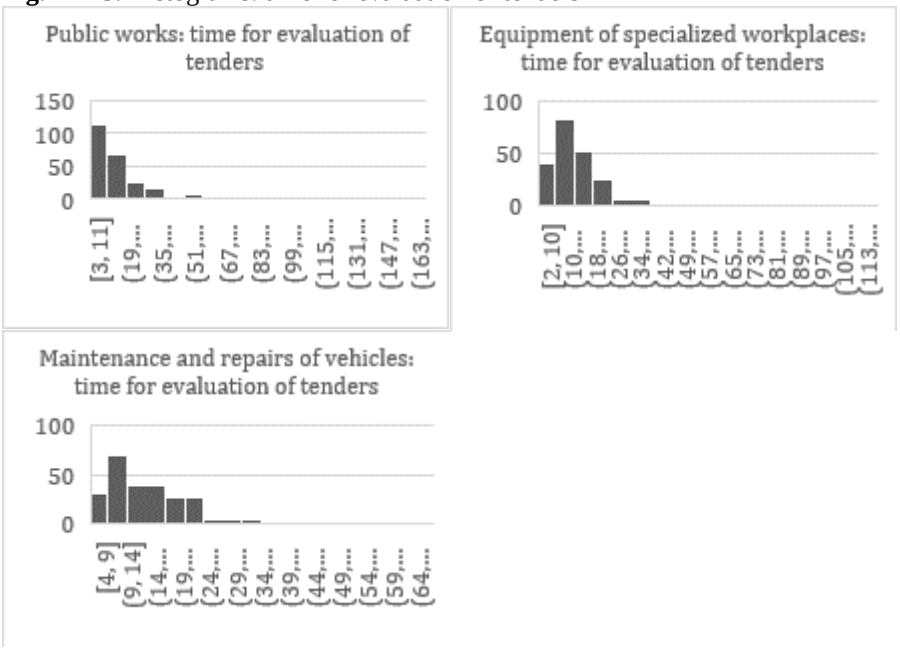
The last application of descriptive statistics was focused on the time period for evaluation of tenders (table 5, fig. 11-13):

Table 5. Descriptive statistics: time for evaluation of tenders in days

Commodity group	Mean	Mode	Median	Min and max	Var.	SD	Skew.	Kurt.
Public works	22	14	19	<3;164>	227,72	15,12	3,88	27,93
Equipment of specialized workplaces	18	10	15	<2;115>	179,20	13,42	3,75	20,21
Maintenance and repairs of vehicles	17	14	15	<4;66>	69,73	8,37	1,64	5,22

Source: authors

Fig. 11-13. Histograms: time for evaluation of tenders



Source: authors

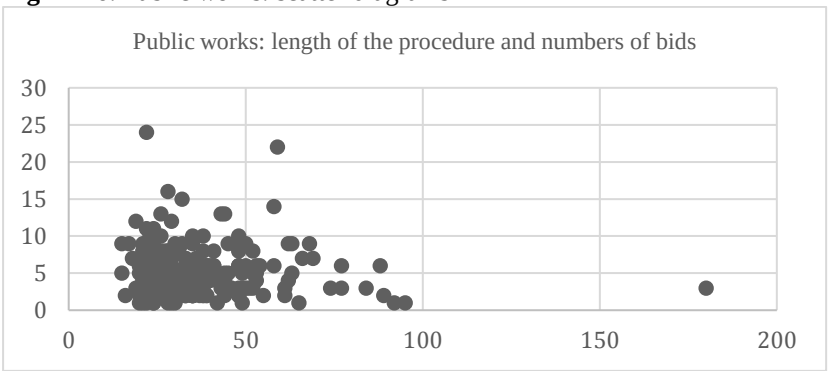
Three types of possible statistical dependencies were analysed in terms of the three chosen commodities:

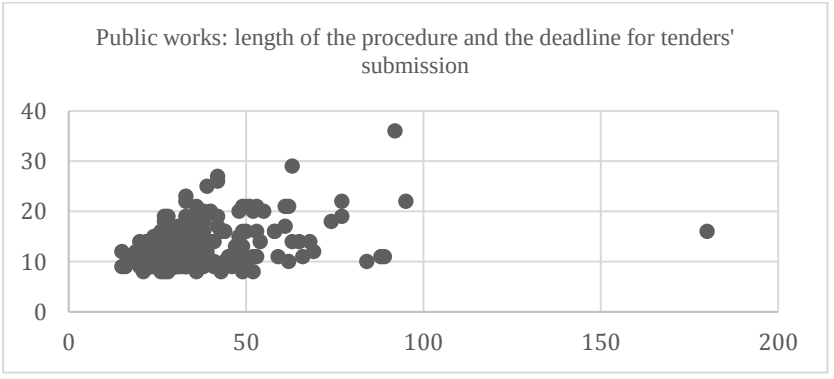
- relationship between the length of the procurement procedure and the number of tenders,
- relation between the length of the procurement procedure and the deadline for submission of tenders,

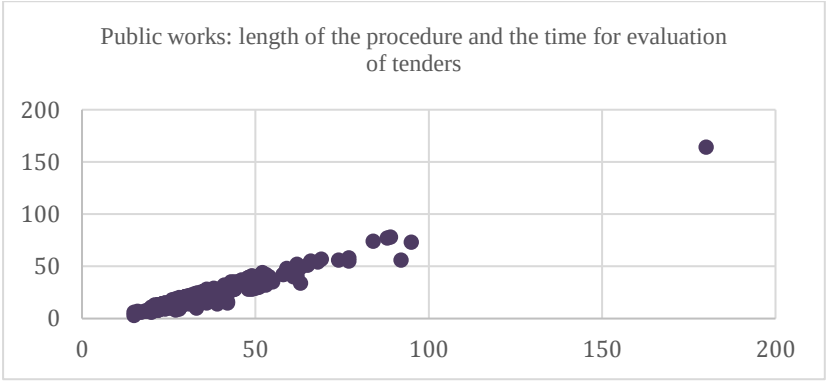
- link between the length of the procurement procedure and the time for tenders' evaluation.

Results are visible from the following scatter diagrams (fig. 14-22):

Fig 14-16. Public works: scatter diagrams

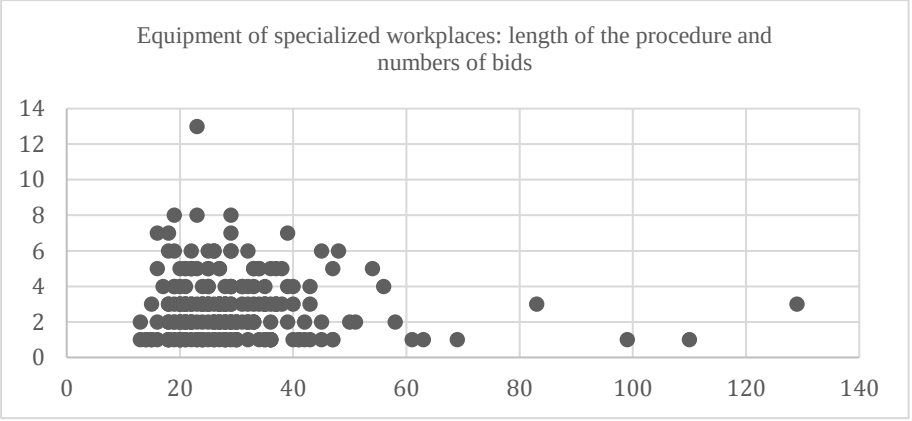


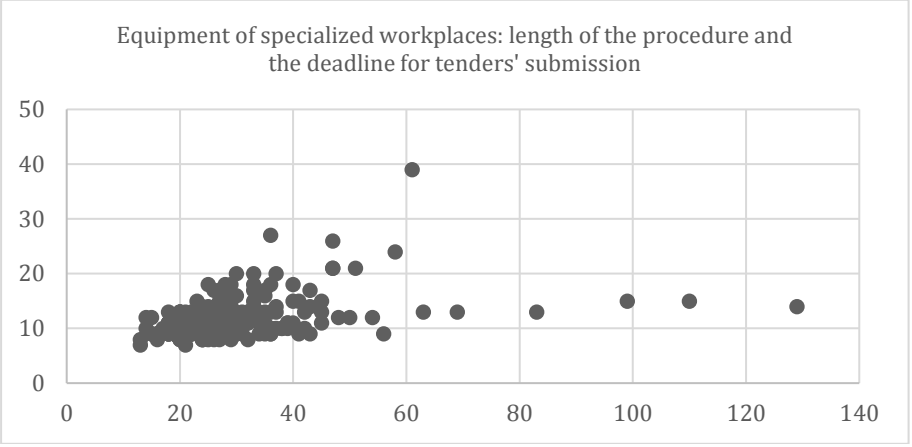


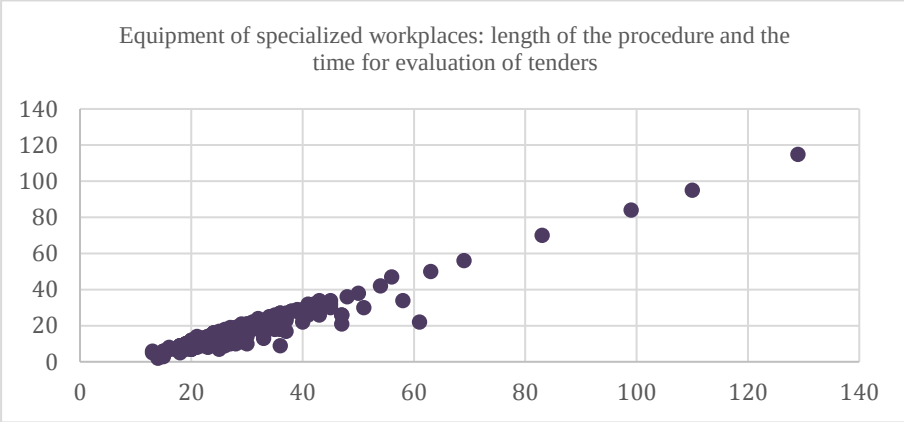


Source: authors

Fig. 17-19. Equipment of specialized workplaces: scatter diagrams

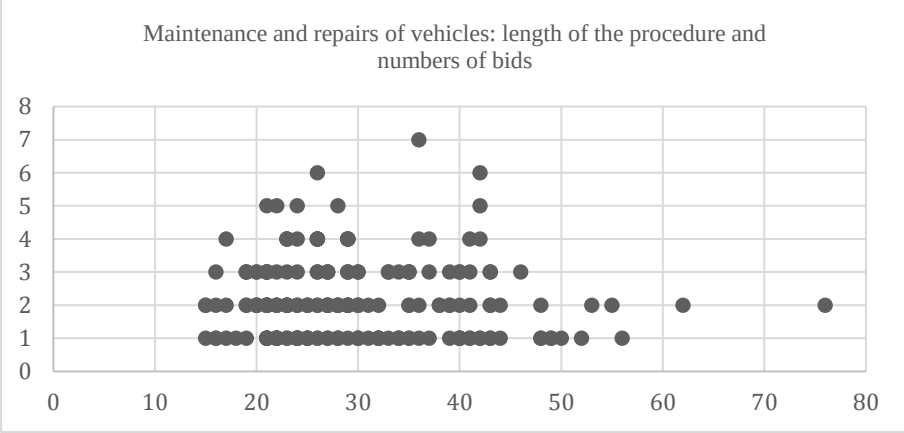


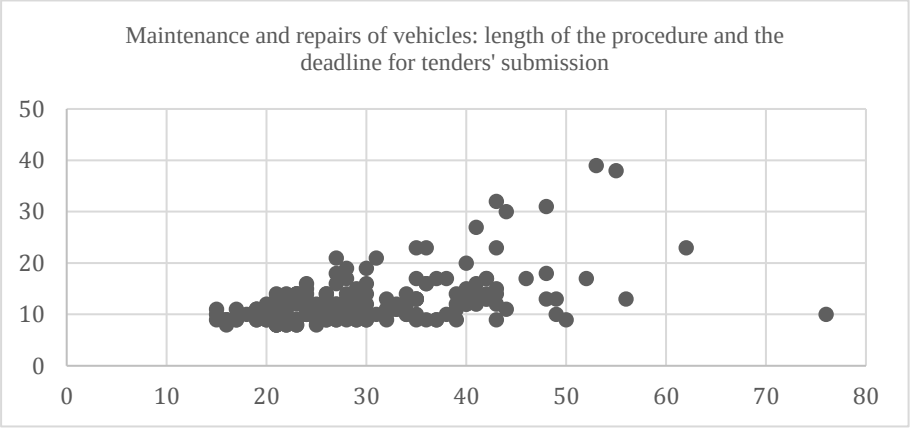


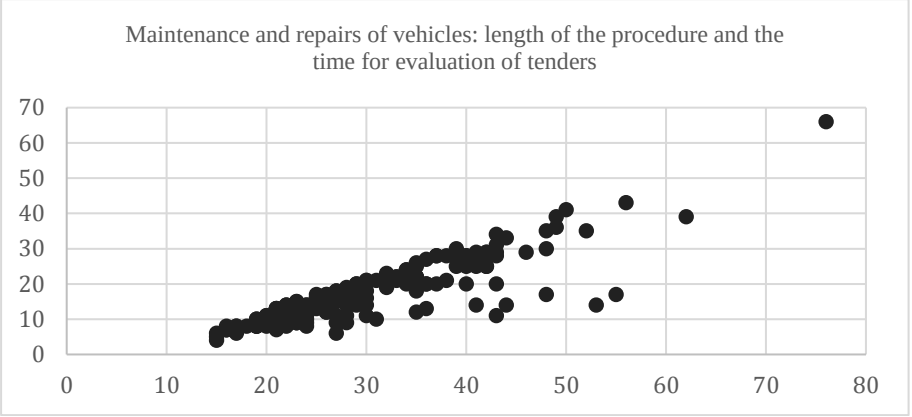


Source: authors

Fig. 20-22. Maintenance and repairs of vehicles: scatter diagrams







Source: author

Based on the results of interviews with the CAF experts, a SWOT analysis was prepared regarding the strengths and weaknesses, opportunities and threats in the use of the NET system in the process of small-scale public procurement in the CAF (table 6):

Table 6. Small-scale public contracts awarding in the MoD: SWOT analysis

Strengths	***Weight***	***Points***	***Partial evaluation***
Electronization of public procurement	0,15	4	0,6
Funding of the NET system	0,25	5	1,25
Number of registered	0,15	3	0,45

economic operators			
IT support of the NET system	0,05	4	0,2
Financial stability of MoD contracting authority	0,2	5	1
Financial control of MoD	0,2	5	1
Overall evaluation: strengths	***1***		***4,5***
Opportunities			
Inovation of users' interface	0,3	4	1,2
Marketing for potential suppliers	0,1	3	0,3
Acceleration of public procurement process	0,2	5	1
Opportunities	***Weight***	***Points***	***Partial evaluation***
Regular MoD staff training	0,4	5	2
Overall evaluation: opportunities	***1***		***4,5***
Weaknesses			
Technical deficiencies of IT systems	0,25	4	1
User unfriendly NET system	0,2	3	0,6
Ineffective staff training	0,3	5	1,5
Overly burdensome paperwork required by the MoD contracting authority	0,25	5	1,25
Overall evaluation: weaknesses	***1****(weight)*		***4,35****(overall evaluation)*
Threats			
Outflow of potencial suppliers	0,3	4	1,2
NET system failure	0,25	3	0,75
Corruption	0,2	4	0,8

Competition of a tool different from the NET system	0,1	4	0,4
Frequent amendments to public procurement legislation	0,1	4	0,4
Non-fulfillment of the obligation by the supplier	0,05	2	0,1
Overall evaluation: threats	***1***		***3,65***

Source: authors based on semi-structured interviews with MoD specialists for public procurement

4. DISCUSSION

All three commodity groups are characterised by a high deviation of the length of the procurement procedures. An extreme deviation was found in the case of public works. All distributions of the frequency are asymmetric and concentrated in the left part of the graphs around their median values. High, resp. non-zero values of skewness indicate an asymmetrical distribution of frequencies in the statistical data set. A high value of the sharpness coefficient means a greater concentration of values around the median.

The duration of the procurement process may be affected by the complexity of a particular commodity, modifications to specifications after publication in the NET system and possible objections submitted by unsuccessful tenderers. The objections were examined through all 3187 small-scale public contracts in the CAF and nothing was found. The situation was slightly different with modifications to the tender documentation which may prolong the public procurement process if necessary to extent the deadline for submission of tenders. The tender documentation was modified in eleven cases. Another possible reason for extending the length of the awarding procedure is the situation when no economic operator submits a tender. This fact was discovered in the commodity group Equipment of specialized workplaces. In such a case, it is possible to extent the deadline for submission of tenders or cancel the contract and anounce a new one. All of these reasons for extending the duration of small-scale public contracts' awarding were rare, so it is obvious that this is not the main reason for the time inefficiency.

The highest average number of tenders is visible for public works contracts, the lowest for maintenance and repairs of vehicles. Construction works are similar both in civilian and military sector and there is wide portfolio of potential suppliers, so the number of tenders tend to be slightly higher. Vehicles used in military can be special, obsolete, so there are fewer operators who can maintain and repair them. Maintenance

and repairs of vehicles are irregular, preparation for the winter or summer season takes place at relatively short intervals and the number of these activities is limited for the rest of the year. The mode value equals 1 in case of bids relating to equipment of specialized workplaces and maintenance and repairs of vehicles. On the basis of legislation, it is possible to conclude a contract with an economic operator in such a situation, but only if the contract price is usual at a given time and place. The highest variance and standard deviation in bid frequencies were found for construction works. All bid frequency distributions are asymmetric and are concentrated on the left side of the graphs around their median values.

As regards the deadline for submission of tenders, the mode value equals 9 days for all of the three commodity groups. This may be due to the internal directive of the CAF, where the minimum time period for tenders' receipt is set at 6 working days. The highest deviation in the deadlines for submission of tenders was found for the commodity group maintenance and repairs of vehicles. Histograms are oriented to the left and sharp, especially in the case of equipment of specialized workplaces.

The most frequent value in the case of the deadline for evaluation of tenders oscilates between 10 and 14 days. The extreme deviation in time is visible for the commodity group of public works. The histograms are also oriented to the left and even sharper compared to the previous ones.

Based on the results of scatter diagrams, a linear statistical dependence is highly probable for the relationship between the length of the procurement procedure and the time for tenders' evaluation in case of public works and equipment of specialized workplaces in the CAF. Therefore, the period for tenders' evaluation should be the subject to further investigation.

The funding of the NET system is the most important strength with the highest partial evaluation in the SWOT analysis, because if the system is properly funded, innovation can be introduced more quickly. NET is "free" for all contracting authorities in the Czech Republic, including the MoD. The operation of the system is covered by the Ministry of Regional Development.

The need for regular training of staff responsible for small-scale public procurement has been identified as a key opportunity to improve the efficiency of the procurement process. This goes hand in hand with the most important weakness - ineffective staff training. Staff training is organised either by the MoD or by NET IT specialists, but only in the form of presentations, so that the participants cannot work actively with the system.

Overly burdensome paperwork on the part of the MoD as a contracting authority is associated with internal directives that are stricter fot the MoD than at the state level (table 1).

Technical deficiencies and user-unfriendliness of the information systems used in MoD public procurement are also sources of inefficiency. Every public procurement starts with the publication of the tender documentation in the NET system and the contacting potential suppliers being registered in the NET system. However, it is sometimes necessary to click with the mouse on each company in the database, which is time-consuming. There is also a lack of an interactive guide for

filling in forms in the NET. The NET system does not alert if a user makes a mistake, which significantly slows down the procurement process. The contract must be signed with an electronic signature, which can be problematic for both small businesses and MoD contracting authorities. In order for contracts to be signed electronically, another information system has to be used in the MoD. Data relating to each contract must be manually entered into four different information systems that do not work together (e.g. the Financial information system and the NET system must be run on separate computers to protect sensitive data). The speed of the Internet connection is also important. Unless procurement officers within the military services or economic operators are properly equipped, the procurement process can extend from weeks to months.

The outflow of potential suppliers represents the most significant threat from the external environment based on a questionnaire completed by the MoD personnel. The use of NET is really complicated for companies because of the problems with electronic signatures and all the associated transaction costs. It is not their duty to do business with the MoD so they may prefer trading with private sector partners. This can lead to a reduction in competition among economic operators and may result in higher contract prices for the public sector.

Two types of staff training were proposed to support the efficiency of small-scale procurement under the CAF: introductory training and periodic training.

The introductory training covers basic information on small-scale procurement in the CAF framework, with a focus on the the NET system and the main mistakes made by those responsible for procurement.

This type of training should be attended by all personnel responsible for the preparation and organisation of procurement within military units. Attendance is verified by the MoD statutory authority. The training is conducted by the responsible NET specialist and the MoD specialist in this area. The format of the training is on-line and all the NET approaches (types of the procurement procedures) are presented through case studies along with an explanation of the related legislation and application of internal directives. After the training, an electronic record is made with the name of the trainer, the date of the training and the date of completion of the training. An attendance list is kept in which the participants confirm the completion of the training. The training is carried out when a new employee starts. The duration shall be approximately 3 hours.

The content of the initial training is as follows:

1. Principles of small-scale public procurement
    a) Exceptions to the Act on public contracts for small-scale public contracts.
    b) Main principles of public procurement based on section 6 of the Act on public contracts.
2. Obligations of the contracting authority of the MoD on the basis of Article 14 of the Ministerial order No. 55/2017.

3. Types of public procurement in the CAF based on the Ministerial order No. 55/2017.
4. Types of procurement procedures, their financial limits and deadlines based on the Normative decree No. 60/2017.
5. Preparation of public procurement in the NET system
    a) Preliminary market consultations and market research.
    b) Preparation of tender documentation and its registration in the NET system.
    c) Selection of an appropriate award procedure and preparation of the call for tenders.
    d) Providing answers to questions from tenderers.
    e) Assessment of compliance with the conditions of participation and evaluation of tenders.
    f) Evaluation and selection of the most advantageous tender.
    g) Handling of tenderers' objections.
    h) Options for cancelling the award procedure.
    i) Publication of structured data on the concracting authority's profile.
6. Registration of information related to the public contract
    a) Registration of the public contract in the NET system.
    b) Registration of the public contract in the Financial information system.
    c) Registration of the public contract in the Register of contracts.
7. The most common mistakes made in the context of small-scale public procurement in the CAF and their prevention
    a) Administrative errors.
    b) Errors affecting the length of the award procedure
        i. Modifications related to the parts of tender documentation (draft contract, quotation, invitation to tender, modification of parameters, specifications, price calculation, qualifying conditions).
        ii. Adition of missing parts of the tender documentation.
        iii. Delayed answers to questions of economic operators.

Regular training will be provided on basic information on small-scale procurement in NET and common mistakes made by responsible staff. The training format, documentation and responsibilities are the same, but the validity of the training, the timing and the content differ from the initial training. The training is carried out annually and the duration is approximately 1,5 hours. In terms of content, the training is shorter, focusing on points 5, 6 and 7 of the initial training.

Both trainings should be interactive, focusing on real case studies based on practice. Participants should complete questionnaires at the end of each type of training and the content of the further training should be adapted to their requirements where possible.

Suggestions regarding technical deficiencies of the NET system:

- re-implementation of the electronic guide to the public procurement process in the NET,
- reintroduction of a possibility to list all economic operators registered in the NET database within each commodity,
- the introduction of software capable of detecting and preventing mistakes made by those responsible in the procurement process,
- automatic transcription of data from the NET system to the Register of contracts,
- ensuring that electronic signatures of documents can be used directly by the responsible staff in the NET system, rather than through a separate software.

5. CONCLUSIONS

The following research questions were identified in the first part of the paper:

- Which parameters of procurement procedures fundamentally influence their length within small-scale public contracts being awarded in the CAF?
- What are the main weaknesses of the NET system operation?

Answer to question 1: According to the results of the scatter diagrams, the length of the award procedure is most affected by the time for which the offers of potential suppliers are evaluated. Correlation analysis and verification of linear statistical dependence between these random variables should be the subject of further investigation.

Answer to question 2: Insufficient training of acquisition experts of the MoD regarding the use of the NET system represents the main weakness of the operation of this software in the CAF.

Research outcome - the design of the staff training system extends the range of possibilities how to facilitate the procurement process. The authors' suggestions regarding the content of employee training can be applied not only in military but also in civilian practice, as the NET system is used by the majority of contracting authorities in the Czech Republic.

The research was limited by the quality of data published in the NET system and by the year 2020. The results can be compared with those of civilian contracting authorities. Similar research can be done from the perspective of the above-threshold procurement. International comparisons can then be made. It is very problematic to

make international comparisons in the field of small-scale public procurement, because the databases of these contracts are difficult to access publicly, unlike above-treshold public contracts.

For future research, it would certainly be interesting to compare the length of the award procedures with the value of the contract, to test this relationship statistically and see if they correlate.

It is not possible to reduce all inefficiencies that occur in public procurement. For example, contracting authorities cannot force economic operators to bid via the NET system. This situation can lead to less competition and higher procurement prices. But it is important to at least try to reduce the sources of inefficiency and thus achieve a smoother flow of materials, goods and services to their end-users.

Based on the literature review conducted in the first part of this paper, the Pareto principle, ABC analysis and SWOT analysis were not applied either in the civilian environment, or in the military in order to determine the risk of inefficiency in public procurement. This research can therefore contribute to the enrichment of scientific theory.

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