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ANTICORRUPTION EFFICACY IN PUBLIC PROCUREMENT

Abstract. According to the results of studies of scientists researches publications over the past 30 years and empirical studies on the public procurement organization, it is distributed on electronic platforms. Attention is focused on the dynamic aspects of the of an such organization development. A review of studies on aspects of the effects of electronic public procurement on their impact on country budget expenditures is made.

The interdisciplinary nature of publications on public procurement studied in the field of technology, management and social interaction is highlighted. Although electronic public procurement should be fairly widespread in the world, a form such as electronic auctions is not often used.

The experience of Ukraine shows that electronic auctions have the potential to improve public procurement. It focuses on the development of partially automatic applications of electronic auctions, which can reduce the administrative costs of buyers and sellers, as well as the transaction costs of budgets in general. Reducing such costs is a significant addition to the savings in lowering prices during the electronic auction and is a significant factor in the effectiveness of modern electronic public procurement.

The author's systematization of the components of the effectiveness of the electronic public procurement system is proposed, despite the fact that its calculation should be systematically automated. An algorithm is proposed for stimulating a responsible executor — budgetary institutions — as a result of effective budget procurement.

The grounds have been formed for identifying elements of further modernization of public procurement using electronic auctions on an electronic platform as an effective tool in the field of preventing money laundering, proposals for a national financial audit of the relevant public procurement benchmarks on an electronic platform.

Keywords: public finance management, budgeting, public procurement, corruption, e-government.

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АНТИКОРУПЦІЙНА ЕФЕКТИВНІСТЬ У ПУБЛІЧНИХ ЗАКУПІВЛЯХ

Анотація. За результатами досліджень публікацій науковців за останні 30 років та емпіричних досліджень щодо організації публічних закупівель поширюється їхня організація на електронних платформах. Акцентовано увагу на динамічних аспектах розвитку такої організації. Зроблено огляд досліджень, присвячених аспектам наслідків електронних публічних закупівель та їхнього впливу на видатки бюджетів країн.

Виокремлено міждисциплінарний характер публікацій щодо публічних закупівель, які вивчаються у площині технологій, управління та соціальної взаємодії. Хоча електронні публічні закупівлі мають достатнє поширення у світі, така форма, як електронні аукціони, використовується нечасто.

На прикладі досвіду України показано, що електронні аукціони мають потенціал для поліпшення публічних закупівель. Зосереджено увагу на розвитку частково автоматичних застосунків електронних аукціонів, які дозволяють знизити адміністративні витрати покупців і продавців, а також трансакційні витрати бюджетів у цілому. Зниження таких витрат є вагомим додатком до економії на зниженні ціни упродовж електронного аукціону і є вагомим чинником ефективності сучасної електронної публічної закупівлі.

Запропоновано авторське групування складників ефективності системи електронних публічних закупівель з урахуванням результатів емпіричного дослідження для системної автоматизації моніторингу процесу закупівель. Запропоновано алгоритм стимулювання відповідального виконавця — бюджетної установи — унаслідок проведення ним ефективних бюджетних закупівель.

Сформовано підстави для визначення елементів подальшої модернізації публічних закупівель з допомогою електронних аукціонів на електронній платформі як дієвого інструменту у сфері запобігання відмиванню коштів, пропозиції для національного фінансового аудиту відповідних бенчмарків публічних закупівель на електронній платформі.

Ключові слова: управління публічними фінансами, бюджетування, публічні закупівлі, корупція, електронне урядування.

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АНТИКОРУПЦИОННАЯ ЭФФЕКТИВНОСТЬ В ГОСУДАРСТВЕННЫХ ЗАКУПКАХ

Аннотация. Исследование базируется на междисциплинарном подходе к государственным закупкам. Опыт Украины показывает, что электронные аукционы имеют

потенциал для улучшения государственных закупок, хотя такая форма используется не часто. Основное внимание уделяется разработке частично автоматических приложений электронных аукционов, которые могут снизить административные расходы покупателей и продавцов, а также транзакционные издержки бюджетов в целом. Сокращение таких затрат является существенным дополнением к экономии при снижении цен во время электронных торгов и является существенным фактором эффективности современных электронных государственных закупок.

Предложена авторская систематизация компонентов эффективности системы электронных государственных закупок, несмотря на то, что ее расчет должен быть систематически автоматизирован. Предложен алгоритм стимулирования ответственного исполнителя — бюджетных учреждений — в результате эффективных закупок бюджета.

Ключевые слова: управление публичными финансами, бюджетирование, государственные закупки, коррупция, электронное правительство.

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Introduction. The sphere of public procurement has a crucial role in the strategic development of the honest and effective governance; procurement organization is widely recognized as the tool for promotion development and prosperity in the 21st century. Governments across the globe appear to identify and tout electronic procurement technology as a way to transform how they govern. Public procurement with modern technologies have been using at the forefront of most reform efforts given that it plays a significant role in promoting accountability and transparency.

Research analysis and assignment. Recent studies have identified e-procurement as the hallmark and main concern of global e-gov agenda [1]. Moreover, e-procurement has become popular as a powerful tool to improve effectiveness and efficiencies as well as service quality for organizations that has adopted it [2]. Numerous authors have researched the meaning «e-procurement». The earliest publications dealing with electronic procurement occurred in the late 90's [3]. Croom and Brandon-Jones (2005) identified e-procurement as Internet system of purchasing that offers processing of electronic purchase order and expansion of administrative functions for customers, suppliers or the suppliers of goods and services by electronic means, usually over the Internet [4]. Driedonks et al (2010) considers that e-procurement includes web technology-based purchasing solutions which aimed at simplifying commercial transactions within and between organizations and information technology solutions for ordering, logistics and handling systems as well as for payment systems [5]. The role of the software and hardware will make the concept of e-procurement easier to understand. The most common definition of eProcurement is defined as using Internet technology in the purchasing process with the potential to make the identification of and negotiation with suppliers more efficient.

Researches from many countries did a huge work by studying the critical phases in the process of awarding public procurement contracts. The life-cycling costing research contain no obvious answer in the literature about the components of the tender process and they vary in number from 3 to 39 components [6].

The purpose of the article is to consider and analyze the indispensable elements of the public e-procurement efficacy.

Research results. The popularity of the Internet has significantly influenced organizations' intentions to use new inter-organizational systems technologies such as e-Procurement. Systematization and grouping of its elements made it possible to offer an effective modern public procurement frame of the online platform applying.

New Law of Ukraine «On Public Procurement» approved by the Verkhovna Rada (Ukraine's Parliament name) on December 15, 2015 declared gradual transition to procurement from paper to electronic mode starting from April 1, 2016. In Ukraine government procurement were held on the principle of reverse auction, the winner is the provider that will offer a lower price. Which means that case of Ukrainian e-procurement system is a good case for the research, as more

than 1,300 auctions take place every day. The public procurement experience has been formed in Ukraine so far, its intermediate results considering is of interest for the development of electronic public procurement in accordance with modern challenges.

During the last decade governments of different countries focus on making digital part of the culture of the public sector at both central and local government [7]. eProcurement has recently been getting a lot of attention from business, industry and government; it is reported to be a powerful tool for increasing efficiency and effectiveness, and quality service to its adopters and their application in our time, inevitable in the manufacturing sector and the service sector, not in private but in the public sector. Hence, the main goal of common activity is to state out whether the implementation of e-procurement systems are such efficient.

Development of digital services from government to citizens and businesses happening during past 25 years. From setting up a first website and publishing essential contact and working hours information online in 90s, mobile applications that enable us in a tax return and pay at the same browser window and purchasing systems. Therefore, governments usually begin their digitization efforts by rebuilding a few fundamental functions around technologies. E-government is argued to increase transparency, anticorruption and accountability, and the core thing -to improve the decision-making process by increasing government capacity.

Any spending and procurement in the public sector must be done in accordance with legislative requirements. Because procurements involve significant budgetary implications, numerous efforts have been made to improve the procurement systems. Resorting to e-procurement systems is one of them. Still, not all eProcurement systems are fully online, for example, in Mexico only nearly 50% percent of public procurement are fully online and adopted electronically, in Italy over 30%. In Germany, this share was less than 5% percent though during last years the state did the significant efforts within the government program «Digital Administration 2020» numerous projects had been implemented. The Germany responsible budget executors committed themselves to offering their administrative services — 575 in total — in digital form by the end of 2022. Ukraine's digitalization assessment by the World Bank in 2018 showed almost it's implementation 68 % rank; the main problem is public servant's incapacity because of low common public service's wages.

Mention the factors that influence the adoption of e-procurement in government sectors to summarize researched articles, the process of implementation e-procurement systems on a national level suggest some components of this process. a) motivation and benefits b) barriers c) development of e-procurement system d) efficiency of e-procurement system. The experience of e-procurement revealed various benefits and have positive effect to organizations and has a financial impact. By literature overview, we would suggest that efficiency of implementation eProcurement systems could be measured by two important group of indicators: transaction costs and procurement price.

The transaction costs in a relationship may be ex-ante, incurred when searching for information, formulating, negotiating and registering contracts between companies, and ex-post, related to the cost of monitoring and enforcement of the contract. Therefore, transaction costs in public procurement are costs connected with the realization of a given contract out of production and caused by behavioral elements, government structure, relations between government authorities and suppliers etc. E-procurement helps provide the latest product information and pricing to the government, which is made available, online. The system is supposed to be up to date with the latest information that will help the buyer to make a more accurate procurement decision [8]. Most of the process of purchases are made automatically online, so these fact is reducing administrative costs. Tiago (2009) agrees, that adopting an e-procurement system has brought great benefits to the government and it is the another way for the government to save on the management cost and at the same time become more efficient in the procurement process of goods online [9].

The availability of purchase announcements to a wide range of people allows reducing the time for searching for suppliers and enhancing quality of transactions with businesses. Availability to purchase online has a positive impact on cycle time and include reducing corruption risks. Comparing case studies of the different countries showed all these benefits are in common for each

of them, which means that arrangement of the state, the specifics of the economy doesn't influence on benefits of e-procurement systems.

The next indicator of e-procurement system efficiency is procurement price. There is already established opinion that report price savings accruing from e-procurement implementation. The procurement price means price as the expenditure on purchased goods or services. We propose to calculate the combination of two factors of transaction costs: i) reducing the time for searching for suppliers ii) enhancing quality of transactions with businesses, increase competition which lead to save cost of buying goods or services at high prices [8].

The time for the public procurement in Ukraine reduced in general from more than 6 months to less than one month, the average saving on prices is 20%. However, 69% of direct dealing, according to the Prozorro statistics, had carried on the risk of opacity and corruption as consequences. The new redaction of the law about public procurement was launched at the beginning of 2020, it will apply at the October, 2020 and reduce the sub-threshold procurements for the 75%, from 200 thousand hryvnias to 50 thousand hryvnias. We propose the formula of the total saving after the public procurement for the responsible executor which should conclude the saving time for procurement corrected for the inflation rate, the saving of the price taking into account market prices and excluding the risk of corruption amount by sub-threshold purchases. The sum of the savings we propose let the general manager of funds or the responsible executor shift for the next procurement or the other purposes within its middle-time plan of activity. This calculation will stimulate the executors to plan their procurements in the thresholds and looking for optimal prices in the future.

The experience of Ukraine too have been showing that e-procurement creates significant opportunities for reductions in purchase prices through aggregation of requirements and economies of scale. In four years of operation, the total number of Prozorro system trades reached more than 4 million, and the savings exceeded 100 billion hryvnias. Furthermore, the European Commission statistics estimated that the public institutions involved in eProcurement have 5-20% savings on annual basis in relation to costs in the period before inclusion. In this way, most of the facts of savings become possible by making procurement online and adopting of electronic auctions, the last one has been used rarely. According to the report of PwC prepared for the European Commission its percentage of total use amounts to 0,6 per cent.

Taking into account the State budget average amount, Ukraine saved only near 3% from budget expenditures and have the more potential of the saving. It happened because the waste in government spending in analyzed purchases — the low efficiency of budget body activities stimulation and the more high inflation rate in Ukraine than in EU. The different public bodies pay widely different prices for observationally equivalent goods, were state budget executors paying on average at least 20% more than local budget bodies.

According to the [10], price savings in procurement are an important aspect of performance evaluation for e-reverse auctions. Observe the role of auctions in reducing purchase price. The term reverse emphasizes the fact it is different from a traditional auction. In the traditional auctions, several buyers bid up the price. At the end of the auction, the bidder who submits the highest bid is awarded the product. Within such auctions, suppliers have opportunities to improve their proposals based on competitive market feedback. Nevertheless, the practice of e-procurement typically ends up that the price of the item or service being purchased drops, often dramatically, during the bidding process. Suppliers can benefit from lower selling and customer generation costs as well as opening to new markets, customers, standardization or increased transparency in bidding by auctions.

Corruption remains a serious threat even despite the development of electronic public procurement auctions in Ukraine. A review of literature has shown that the concept of corruption in the overwhelming majority is considered individual corruption, personal misuse of rules for private profit.

Other authors identify systemic corruption: corruption has a direct impact on societies when a public policy is not delivered the forms of corruption include not only public officials' personal gain behavior but also interest exchange process, such as nepotism, nonfeasance and disposal of

public resources [11]. Fazekas and Kochish found that in Europe, the presence of corruption risk markers is associated with an increase in tender prices by 2.5—2.7%, and if there is more than one bidder in the tender, budget expenditures are reduced by 9.6% [12].

This data means that corruption harmful for the public procurement. In generally, corruption can hinder the development of country by weakening national institutions and eroding trust in government, that is a serious problem for developing countries. Exact assessments on costs of corruption can never be made therefore estimate is that bribery and corruption may surpass even harder for the properly public management. Nowadays for determining the efficiency and purposeful using the budget funds, an independent financial control is needed, which is an external or internal audit [13].

Should be mentioned that corruption in the procurement process takes various forms, including the allocation of government contracts to political cronies for manipulating the procurement process. Cases showed that there are failures to understand when contractual relationships exist. In addition, a huge variety of corrupt forms specific to procurement transactions that include extortion, embezzlement, nepotism, fraud, kickback schemes, unnecessary purchases and payments made for goods or services not received.

For preventing specific form of corruption should be monitored on which stage of procurement it happens for further development of anti-corruption actions. The public procurement process is not substantially different in different countries, but on the other hand, there is no common point of view in the scientific literature that would determine the single stages of the procurement process.

The procurement process for the external analysis include information gathering, supplier contact, background review, negotiation, fulfillment, maintenance and disposal, and all the renewals transparency. The three main stages of procurement process include procurement planning, procurement solicitation, and contract award with further performance. Separate purchases have three stages, advertising, prequalification, bid document preparation, and submission of bids; bid evaluation, post-qualification and award of contract; contract performance and supervision. We proposed the automatically indicators system approach further developing during the auction in the *Tabl. below*.

Table

Automatization of public procurement auctions (example of Ukraine)

Participant of the automatically monitoring	Efficacy (saving)	Efficiency of the procurement members
Main Budget Executor (Buyer)	Before, during and after procurement	Before, during and after procurement
Sellers (divided on small, medium and large)	Before, during and after procurement	Before, during and after procurement
Ministry of Finance of Ukraine	Before and after procurement	After procurement
State Treasury Service of Ukraine	Before procurement	After procurement
Department of Public Procurement from Ministry of Economy	During and after procurement	Before and after procurement
External State audit (State Audit Service and Accounting Chamber)	After procurement	During and after procurement
Antimonopoly Committee of Ukraine	Before and during procurement	Before and after procurement
Law enforcement	After procurement	After procurement

Source: developed by authors.

Tendering and contract awarding is one of the most vulnerable stages of public procurement process where most corruption occurs in developing countries. For example, major corruption happened in public procurement processes including procurement planning, project documentation, tender processes, contract awards and implementation, and accounting and auditing [14]. Actually, most of these traditional models that are beginning form 2008 do not discuss general process of procurement, mostly they deal with a separate part of the process (buying). Providing the complex

of the Best Practices Index in the e-System will allow to compare the purchases of similar customers: schools, medical institutions, courts and other government agencies and enterprises. Customers can find reasons for inefficiencies and recommendations to become the best. It will help participants find a reliable customer who should be trusted and cooperated.

The main stages of the supply chain in procurement we propose that procurement process should consist of identifying the frame of responsible executor needs at the planning budget stages, then operational activity will correct it by evaluating user requirements. This new needs could be recalculated by the executor itself within the result-based management frame, but in the future the responsible executor's top-manager will determine the type of purchase by the market analysis and the possible suppliers identification. The accountability of pre-screen all suppliers, evaluating supplier base, choosing of supplier, delivery of product and performance evaluation should be automatized by the eProcurement system.

Conclusions. The public procurement process requires not only transparency, but also partial automation of electronic auctions using an electronic platform. According to the experience of Ukraine, a type of organization such as an electronic auction should be developed in the electronic procurement system. Automation of procurement monitoring at the auction means the calculation by the electronic system of typical indicators for similar groups of buyers. Subsequent spot audit, at the one hand, is an effective anti-corruption tool; on the other hand, it allows optimizing and facilitating the control system itself through the automatic detection of deviations in the procurement of similar buyers. In addition, the electronic procurement system through auctions is more effective than regular transparent procurement in connection with quick access to information on price and offer options; it saves time and administrative costs of budgetary institutions.

Література

1. Ronald N. K. Factors Contributing to Adoption of E-Procurement in County Governments: A Case Study of County Government of Bomet / N. K. Ronald, J. Q. Omwenga // International Journal of Academic Research in Business and Social Sciences. — 2015. — Vol. 5 (10). — P. 233—239.
2. Eei K. S. Survey on benefits and barriers of e-procurement: Malaysian SMEs perspective / K. S. Eei, W. Husain, & N. Mustaffa // International Journal on Advanced Science Engineering Information Technology. — 2012. — № 2 (6). — P. 14—19.
3. Ramaseshan B. Attitudes towards use of electronic data interchange in industrial buying: Some Australian evidence / B. Ramaseshan // Supply Chain Management. — 1997. — Vol. 2 (4). — P. 149—157.
4. Croom S. R. Key issues in e-procurement: Procurement implementation and operation in the public sector / S. R. Croom, A. Brandon-Jones // Journal of Public Procurement. — 2005. — № 5 (3). — P. 367—387.
5. Driedonks B. A. Managing sourcing team effectiveness: The need for a team perspective in purchasing organizations / B. A. Driedonks, J. M. Gevers, A. J. van Weele // Journal of Purchasing and Supply Management. — 2010. — № 16 (2). — P. 109—117.
6. Andhov M. Cost and EU Public Procurement Law: Life-cycle Costing for Sustainability / M. Andhov, R. Caranta, A. Wiesbrock (Eds.). — Routledge, 2019.
7. Brown A. Appraising the impact and role of platform models and Government as a Platform (GaaP) in UK Government public service reform: Towards a Platform Assessment Framework (PAF) / A. Brown, J. Fishenden, M. Thompson, W. Venters // Government Information Quarterly. — 2017. — Vol. 34 (2). — P. 167—182.
8. Nawi Mohd Roslan M. N. The benefits and challenges of E-procurement implementation: a case study of Malaysian company. / M. N. Nawi Mohd Roslan, N. A. Salleh, F. Zulhumadi, A. N. Harun // International Journal of Economics and Financial Issues. — 2016. — № 6 (S7). — P. 329—332.
9. Tiago M. T. Internet marketing adoption: Factors affecting website sophistication / M. T. Tiago // International Journal Electronic Customer Relationship Management. — 2009. — № 1 (3). — P. 287—306.
10. Hanák T. Electronic reverse auctions in public sector construction procurement: case study of Czech buyers and suppliers T. Hanák // TEM Journal. — 2018. — № 7 (1). — P. 41—52.
11. Liu X. A literature review on the definition of corruption and factors affecting the risk of corruption / X. Liu // Open Journal of Social Sciences. — 2016. — № 4 (6). — P. 171—177.
12. Fazekas M. Uncovering high-level corruption: cross-national corruption proxies using government contracting data / M. Fazekas, G. Kocsis // European Research Centre for Anti-Corruption and State-Building Working Paper. — 2015. — № 46.
13. Isroilov B. I. Financial Control of Public Procurement to Prevent Corruption in the Development of Digital Economy / B. I. Isroilov, U. K. Abduganiyev, B. B. Ibragimov // 2nd International Scientific and Practical Conference «Modern Management Trends and the Digital Economy: from Regional Development to Global Economic Growth» (MTDE 2020) // Atlantis Press. Advances in Economics, Business and Management Research. — 2020. — Vol. 138. — May. — P. 546—552.
14. Neupane A. An empirical evaluation of the potential of public e-procurement to reduce corruption / A. Neupane, J. Soar, K. Vaidya // Australasian Journal of Information Systems. — 2014. — № 18 (2).

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References

1. Ronald, N. K., & Omwenga, J. Q. (2015). Factors contributing to adoption of e-procurement in county governments: a case study of County Government of Bomet. *International Journal of Academic Research in Business and Social Sciences*, 5 (10), 233—239.
2. Eei, K. S., Husain, W., & Mustaffa, N. (2012). Survey on benefits and barriers of e-procurement: Malaysian SMEs perspective. *International Journal on Advanced Science Engineering Information Technology*, 2 (6), 14—19.
3. Ramaseshan, B. (1997). Attitudes towards use of electronic data interchange in industrial buying: Some Australian evidence, *Supply Chain Management*, 2 (4), 149—157.
4. Croom, S. R., & Brandon-Jones, A. (2005). Key issues in e-procurement: Procurement implementation and operation in the public sector. *Journal of Public Procurement*, 5 (3), 367—387.
5. Driedonks, B. A., Gevers, J. M., & van Weele, A. J. (2010). Managing sourcing team effectiveness: The need for a team perspective in purchasing organizations. *Journal of Purchasing and Supply Management*, 16 (2), 109—117.
6. Andhov, M., Caranta, R., & Wiesbrock, A. (Eds.). (2019). *Cost and EU Public Procurement Law: Life-cycle Costing for Sustainability*. Routledge.
7. Brown, A., Fishenden, J., Thompson, M., & Venters, W. (2017). Appraising the impact and role of platform models and Government as a Platform (GaaP) in UK Government public service reform: Towards a Platform Assessment Framework (PAF). *Government Information Quarterly*, 34 (2), 167—182.
8. Nawi Mohd Roslan, M. N., Salleh, N. A., Zulhumadi, F., & Harun, A. N. (2016). The benefits and challenges of E-procurement implementation: a case study of Malaysian company. *International Journal of Economics and Financial Issues*, 6 (S7), 329—332.
9. Tiago, M. T. (2009). Internet marketing adoption: Factors affecting website sophistication. *International Journal Electronic Customer Relationship Management*, 1 (3), 287—306.
10. Hanák, T. (2018). Electronic reverse auctions in public sector construction procurement: case study of Czech buyers and suppliers. *TEM Journal*, 7 (1), 41—52.
11. Liu, X. (2016). A literature review on the definition of corruption and factors affecting the risk of corruption. *Open Journal of Social Sciences*, 4 (6), 171—177.
12. Fazekas, M., & Kocsis, G. (2015). Uncovering high-level corruption: cross-national corruption proxies using government contracting data. *European Research Centre for Anti-Corruption and State-Building Working Paper*, 46.
13. Isroilov, B. I., Abduganiyev, U. K., & Ibragimov, B. B. (2020, May). Financial Control of Public Procurement to Prevent Corruption in the Development of Digital Economy. In *2nd International Scientific and Practical Conference «Modern Management Trends and the Digital Economy: from Regional Development to Global Economic Growth» (MTDE 2020)* (pp. 546—552). Atlantis Press. *Advances in Economics, Business and Management Research*, Vol. 138.
14. Neupane, A., Soar, J., & Vaidya, K. (2014). An Empirical Evaluation Of The Potential Of Public E-Procurement To Reduce Corruption. *Australasian Journal of Information Systems*, 18 (2).

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