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Article

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The criteria for establishing and maintaining an optimal governance model for public procurement

Nikola Komšić

Abstract

The objective of this paper is to analyze methodologies for evaluating public procurement system, as well as, statistical data, in order to determine which elements can be identified as essential for establishing an optimal governance model for public procurement and to provide recommendations how to maintain it. Public procurement system consists of a process that involves policies and procedures which are aimed at acquiring the goods, services and works which are essential for accomplishing goals, responsibilities and critical activities of public entities and institutions, which contribute to the overall normal functioning of country's economy and well-being of its citizens, at large. On the other hand, public procurement system can be viewed as a tool for assessing if a country is prepared to avoid or to mitigate the negative effects caused by emergency events. This was especially the case during the past two years, since there was a worldwide emergency situation caused by the COVID-19 pandemic since the 2020. Other recent extreme events, such as floods, earthquakes, tsunamis, social events and wars, have challenged the preparedness of public procurement systems to respond and secure essential and vital functions of countries, regions and global world economy. These emergency events have shown that no country in the world is immune to negative effects which manifest as either a lack of necessary, many times, vital goods or services or in the worst case, the loss of human life. Therefore, it is important to question again if the preparedness of public procurement system can contribute to alleviate these extreme situations and if it can contribute to determine what should be considered the optimal governance model for public procurement.

Keywords

Governance, Optimal, Public interest, Public procurement, Risk management.

1. Introduction

Public procurement has functioned for years as a governmental activity which enables contracting authorities to successful carry out their duties. It can be said that public procurement has the task of supporting the implementation of projects which are of public interest. The result of this concept has been visible through successful use of large infrastructure projects such as new highways, railroads, hospitals, airports etc. However, the last couple of years have demonstrated that public procurement preparedness can be an indicator of whether a country is capable of handling crisis or not. The widespread of the COVID-19 virus since 2020 caused a global and radical change and a challenge to businesses, as well as to functioning of a state. In the first year of COVID-19 pandemic all countries have been tackling how to maintain the healthcare system in order to avoid collapse. The task of acquiring the necessary medical items, especially personal protection gear (masks, suits), testing kits (materials), respirators and the vaccines, due to high demand became consequently an expensive and difficult challenge. Some countries were able to quickly mobilize

and reduce the damage caused by the pandemic, while others were unable to properly act and have taken a serious toll.

Two years have passed since and many have analyzed what was done well, what was done wrong and how to prepare for something similar or worse. Besides the pandemic, the world is more frequently than before faced with new challenges, among the latest caused by the war in Ukraine. This war conflict has caused an additional hurdle for many, but for some a serious challenge in acquiring goods and especially commodities that were believed to be generally available.

Due to these events, it is necessary to question what is an optimal governance model for public procurement? Some systems in developed countries were considered to be well established, but because of the crisis they were put to the test and many flaws and vulnerabilities became visible. The objective of this analysis is to present what are the criteria for establishing an optimal model for public procurement with the recommendations for maintaining it.

2. The methodology of assessment

EU – Single market scoreboard

Prior to the COVID-19 pandemic, in the field of public procurement the methodology for assessing the quality and effectiveness of a national public procurement was based on, what could be defined as the standard criteria: the average number of bids, award criteria, duration of the procedure etc. In the EU the main goal is to achieve the "value for money" principle, which is defined as providing the required goods, works, and services in an economic, efficient and effective way (European Commission, 2017). Also, the EU regulation emphasizes compliance with the three key principles: equal treatment, non-discrimination and transparency (European Commission, 2022). Additionally, the EU Commission has developed a Single market scoreboard for the sector of public procurement. The performance of public procurement in each EU member state is measured by 12 indicators (European Commission, 2022). Some of these indicators are valuable since their effect is measurable, such as: the portion of contracts awarded where there was only one bid, the number of negotiations without public call, the number of procedures where the award criteria was only price, how many SMEs have been awarded the contract etc. On the other hand, some indicators are defined in such a way that it is difficult to measure their concrete effect on public procurement and therefore their value. Precisely, those indicators are the following: missing call for bids, missing buyers registration number and seller registration number. As stated in the methodology, the explanation for missing call for bids is that it measures the proportion of contracts awarded after a call for tender whose name and conditions were not clear. Unfortunately, this explanation does not provide a clear indication and its effect on public procurement. For the indicators, missing seller and buyer registration number, in public procurement the principle of transparency requires to provide information regarding the name of the contracting authority as well as the name of the bidder who has been awarded the contract, therefore the use of these indicators for measuring the performance of the public procurement system is not well established.

MAPS - Methodology for Assessing Procurement Systems

MAPS represents Methodology for Assessing Procurement Systems (MAPS, 2003). This methodology was designed and supported by a joint initiative of the International Financial Institutions, such as the World Bank, EBRD and others, and the Development Assistance Committee (DAC) starting in 2003/2004 and it has been used by the development banks, bilateral development agencies and partner countries to assess their national procurement systems (MAPS, 2003). This methodology is based on four main pillars:

1. Legal, Regulatory and Policy Framework
2. Institutional Framework and Management Capacity
3. Procurement Operations and Market Practices
4. Accountability, Integrity and Transparency

Each of these pillars has several indicators and sub-indicators. In total, there are 14 indicators and 55 sub-indicators. This represents a very detailed approach for assessing a national public procurement system. The main objective of this methodology is to examine if a national public procurement system can successfully implement the principle "value for money", as well as sustainability. Some of these indicators are similar to the ones in the EU and are also a standard when it comes to analyzing public procurement, but some indicators/sub-indicators from this methodology are valuable for a detailed estimation of a national procurement system.

The first sub-indicator is: 1(b) – Procurement methods. This sub-indicator assesses whether the legal framework includes: i) a clear definition of the permissible procurement methods; and ii) the circumstances under which each method is appropriate.

An important aspect of this sub-indicator is, as follows: "*justifying single-source procurement on the grounds of an emergency should be permitted only in the exceptional circumstances of a catastrophic event, where there is an extremely important need and where any other method of procurement would be impractical given the time constraints*." (MAPS, 2018). It is also stated that it should not, however, be used simply as a consequence of poor planning.

Since ICT technology in the past decade has been widely introduced into public procurement systems, MAPS defines sub-indicators that are designed to measure this area: electronic procurement (e-Procurement); norms for safekeeping of records, documents and electronic data etc.

Additionally, there is another indicator, which measures if "*public procurement is embedded in an effective information system*". The objective of this indicator is to assess the extent to which the country or entity has systems to publish procurement information, to efficiently support the different stages of the public procurement process through application of digital technologies, and to manage data that allows for analysis of trends and performance of the entire public procurement system, and therefore, this indicator captures the availability, accessibility, integration and reliability of public procurement information systems (MAPS, 2018). This indicator is assessing if the information system provides publication of, among other details, information related to specific procurements, at a minimum, advertisements or notices of procurement opportunities, procurement method, contract awards and contract implementation, including amendments, payments and appeals decisions. As part of this indicator there is a sub-indicator, that is worth mentioning. It is called "*Strategies to manage procurement data*". Public procurement is an activity that is based on data. In other words, public procurement consists of acquiring data, analyzing data, using that data in practice and verifying it afterwards. As stated in this sub-indicator, statistical information on procurement is essential to evaluate the policies and the operation of the system. Statistics also provide a means for monitoring performance of the system and compliance with the legal and regulatory framework (MAPS, 2018). It also states that statistical information can also be a tool for procurement planning and market analysis and in order to ensure comprehensiveness and efficiency, the system should be based on data available in e-Procurement or other information technology systems.

The next significant indicator from this methodology, measures if "*the public procurement market is fully functional*". This indicator is primarily assessing if the market can response to public procurement solicitations. The market is shaped by many different factors (political, economics, geography etc.), which all either support or hinder the contracting authority when it has planned to acquire the desired good, services or works. In relation to that, there is a sub-indicator – Dialogue and partnerships between public and private sector. Since public procurement is an activity which depends on information, the dialogue between the government and the private sector is crucial. Proper planning and execution are not possible without taking into account the voice of the private sector. This is especially relevant, as stated for this sub-indicator, with national procurement objectives, changes to the legal and institutional framework and practices (MAPS, 2018). Therefore, this sub-indicator analyzes if there are forums for dialogue between the government and the private sector.

Additionally, it states that information and training programmes on public procurement should be regularly offered for the private sector, either by the government or in co-operation with private institutions. These programmes should include approaches tailored to the needs of small businesses, to support supplier diversity, and should include a module on ethics and integrity in public procurement (MAPS, 2018).

Another important sub-indicator from this group is - Key sectors and sector strategies. Depending on the contracting authority there will be different key needs and therefore different key markets in public procurement. However, it is important to have a clear representation of all the elements that are part of that sector. As stated for this indicator, performing a sector market analysis helps to determine sector - related risks (in terms of expenditure, competition, environmental impact, socio-economic risks, etc.) and the government's scope to influence specific market segments (MAPS, 2018). Since contracting authority has a strong influence on the market it is important to carefully analyze potential effect that can be created in the long-term. Through careful analysis it should be determined how to achieve, if it is possible, sustainability, innovation etc.

Four countries (Chile, Peru, Senegal and Norway) have participated in the pilot phase, which was carried in 2017, in order to test this methodology. From this group Norway is the only developed country that participated. The majority would agree that public procurement system in Norway is well established and well-functioning and what is also interesting is that public procurement rules in Norway are harmonized with EU directives. However, this methodology has discovered something interesting. When it comes to strategies to manage procurement data, it was discovered that there is a lack of capability for conducting complex analyses of the acquired data. Precisely, it was concluded that: "While Norway's e-procurement system is quite advanced, the data collected through the system does not allow for complex analysis, such as trends, levels of participation, efficiency and economy of procurement and compliance with requirements. Decentralisation makes it difficult to collect the information; not all information is required to be published on Doffin (national public procurement platform), so that data is located in a decentralized database and not fed into Doffin. While larger contracting authorities use analytics, smaller agencies do not have the skills, technical capabilities or capacity to conduct the same level of analysis. In addition, the reliability of information in the database remains unclear: audits are carried out, but not routinely, and they remain limited to financial information." (MAPS, 2018). Also, it was concluded that Norway's e-procurement system does not provide all details related to the public procurement. More precisely, it is stated that evaluation reports, the supplier's bid and other details related to implementation are usually not disclosed in accordance with national regulations. It must be

pointed out that these reports from the pilot phase may differ from the final approved methodology and therefore are not subject to quality assurance, however they do provide valuable insight about the public procurement system. Additionally, the data for Norway shows that suppliers on average have rarely participated in engagement meetings organized by contracting authorities (MAPS, 2018).

OECD – Government at a glance

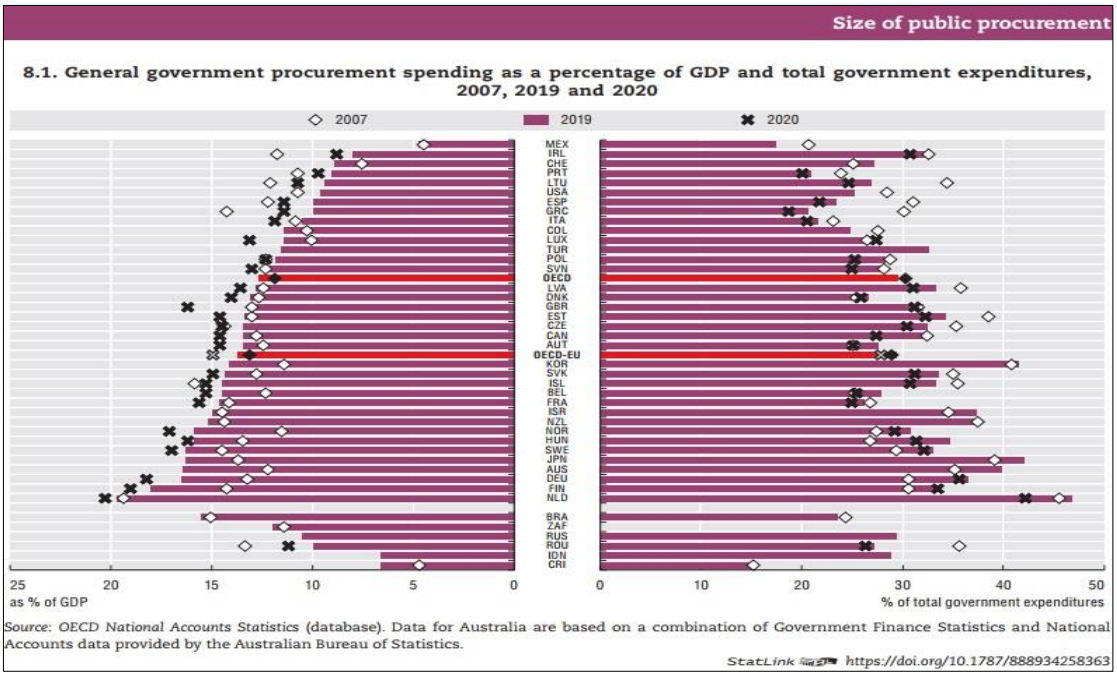
Another methodology for estimating the national public procurement system is used by the OECD. Precisely, it is the methodology in the Government at a Glance document, which is published every two years. Even though this is aimed at public governance for OECD countries, their analysis has a part which is dedicated to public procurement. Since the latest edition has been published in 2021, it has been updated because of the COVID-19 pandemic and it has the following elements which were analyzed: size of public procurement; strategic public procurement for delivering social value, E-procurement and integration with public financial management; managing emergency procurement and risks and professionalization of public procurement.

When talking about the size of public procurement, the data from Figure 1 show that public procurement expenditure, as percentage of GDP has increased across the OECD over the last decade i.e. from 11.8% of GDP in 2008 to 12.6% of GDP in 2019 (OECD, 2021). On the other hand, the COVID-19 pandemic contributed for the increase in public procurement relative to GDP in 2020. Based on the data that is available, among 22 OECD-EU countries public procurement increased from 13.7% of GDP in 2019 to 14.9% of GDP in 2020(OECD, 2021). Other countries had significant increases such as Norway (from 15.8% to 17.1%) and the United Kingdom (13.2% to 16.1%)(OECD, 2021). It is concluded that these increases are due both to governments purchasing goods and services to support their COVID-19 responses, and to GDP falling as a result of the crisis.

However, it was also concluded that public procurement as a share of total government expenditure decreased across all responding OECD countries by 1-2 percentage points in 2020 compared to 2019. The explanation for this is because non-procurement government expenditure grew faster than procurement expenditure since support packages provided by governments in response to the pandemic have drastically increased total government expenditure (53.6% of GDP in OECD-EU countries on average in 2020) (OECD, 2021).

Public procurement, as mentioned before, is used as a tool to fulfill the demands across all public relevant areas from health to environmental protection, public order and economic affairs etc.

Figure 1- General government procurement spending as % of GDP and total government expenditures[1]



Detailed analysis shows that health expenditure represented the largest share of public procurement spending with an average of 29.3% across OECD countries in 2019. Belgium had the largest public expenditure for health sector with 46.7%, Japan 44.4%, the Slovak Republic 43.6% and Italy 42.3%.

The OECD also analyses the integration of e-procurement with public finance management, which is similar to the MAPS methodology. The data, displayed in Figure 2, show that 87% of OECD countries have integrated their public procurement systems with their public financial management system, i.e. planning public procurement in line with budget planning (OECD, 2021). Also, in 83% of OECD countries public entities are required to certify budget availability before starting public procurement (OECD, 2021). When it comes to functionalities of e-procurement it is stated that transactional functionalities of e-procurement were less developed: 97% of the countries used electronic bid submission, but just 63% used electronic submission of invoices (OECD, 2021). On the other hand, it was determined that more advanced e-procurement functionalities are also being developed: 82% publish procurement plans to communicate government needs, 61% have introduced ex post contract management; 64% use supplier registries, 70% framework agreement modules and 39% business intelligence functionalities (OECD, 2021). As an example, Israel provides a contract management function that allows internal government users to create a variety of procurement reports, while in Lithuania, information on concluded contracts is transferred from the national e-procurement system to the e-invoicing systems, which helps to track the implementation of specific contracts.

[1] Source: Government at a Glace 2021, OECD.

Figure 2 - General government procurement spending as % of total procurement spending[2]

8.2. General government procurement spending by function as a percentage of total procurement spending, 2019

Country	General public services	Defence	Public order and safety	Economic affairs	Environmental protection	Housing and community amenities	Health	Recreation, culture and religion	Education	Social protection
Austria	11.8	1.6	3.0	21.4	1.3	0.7	36.3	3.9	9.1	10.9
Belgium	12.7	1.5	2.0	13.1	2.8	1.1	46.7	3.1	6.7	10.3
Chile	4.8	7.9	8.0	13.5	1.3	6.3	25.3	2.1	20.5	10.3
Czech Republic	8.6	2.5	4.1	22.3	5.0	3.4	32.5	5.4	11.5	4.7
Denmark	15.0	5.0	2.8	10.4	1.3	0.7	32.0	5.2	12.0	15.8
Estonia	9.5	10.7	3.9	18.1	3.7	2.4	24.8	6.8	15.7	4.4
Finland	22.6	3.8	2.3	12.8	0.5	1.1	23.0	4.1	11.8	18.0
France	7.3	6.2	2.5	13.0	4.2	3.5	38.1	4.8	6.5	13.8
Germany	11.2	4.0	3.2	9.2	2.1	1.1	39.6	3.4	6.7	19.4
Greece	18.0	4.4	1.6	15.3	5.1	1.7	38.6	3.3	7.7	4.1
Hungary	18.2	3.9	3.9	29.5	2.4	2.2	18.3	8.7	8.7	4.1
Iceland	7.5	0.4	3.8	20.3	2.4	2.4	25.7	8.7	19.0	9.8
Ireland	5.5	0.9	4.6	15.3	2.7	5.6	31.1	3.9	9.2	21.2
Israel	6.6	21.0	3.4	5.9	2.5	2.4	27.5	5.2	15.1	10.3
Italy	13.4	3.6	3.5	12.3	6.9	3.3	42.3	4.1	5.1	5.6
Japan	6.5	3.3	1.9	14.4	5.7	2.1	44.4	1.6	6.3	13.9
Korea	5.7	11.6	2.8	15.6	3.9	6.1	32.2	2.8	12.5	6.8
Latvia	7.9	7.1	4.4	19.9	3.6	4.0	28.4	5.5	12.3	6.7
Lithuania	7.6	11.1	5.4	23.2	2.8	6.0	14.7	6.0	17.1	6.2
Luxembourg	15.1	1.3	3.1	21.4	4.4	2.2	21.6	5.9	7.9	17.1
Netherlands	6.2	3.2	3.5	11.4	4.8	1.5	35.9	3.2	8.4	21.8
Norway	10.0	7.9	3.0	22.9	4.0	3.9	24.4	4.9	9.9	9.2
Poland	6.2	6.0	4.3	27.0	3.0	4.0	28.8	5.9	11.3	3.6
Portugal	12.8	2.7	3.3	21.1	3.9	3.3	35.3	4.7	9.3	3.6
Slovak Republic	8.8	3.6	4.3	21.1	3.7	2.5	43.6	3.4	6.8	2.1
Slovenia	10.2	2.7	3.4	22.7	2.9	2.9	31.5	5.1	13.3	5.4
Spain	10.8	3.2	2.8	14.8	6.8	3.0	32.4	6.1	10.9	9.3
Sweden	18.7	4.5	2.9	13.6	2.1	2.9	21.7	3.7	16.1	13.7
Switzerland	21.8	6.0	5.7	15.6	4.0	1.4	1.9	3.1	18.8	21.6
United Kingdom	3.7	10.3	6.0	14.3	3.8	3.4	32.1	2.8	10.0	13.6
United States	10.4	21.7	6.1	22.3	0.0	2.4	13.6	1.7	18.5	3.2
OECD	9.4	10.5	4.1	16.7	2.8	2.6	29.3	3.0	11.6	10.0
OECD-EU	10.7	4.2	3.2	13.8	3.7	2.4	36.4	4.3	8.1	13.4
Costa Rica	4.7	0.0	7.7	13.5	3.7	4.5	35.4	1.8	21.2	7.6
Romania	8.7	3.6	2.8	29.7	4.5	8.6	26.9	5.2	6.6	3.6

Source: OECD National Accounts Statistics (database); Eurostat Government Finance Statistics (database).

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The available data shows that from 32 OECD countries, only in 19 countries there is a ex post contract management as part of e-procurement system.

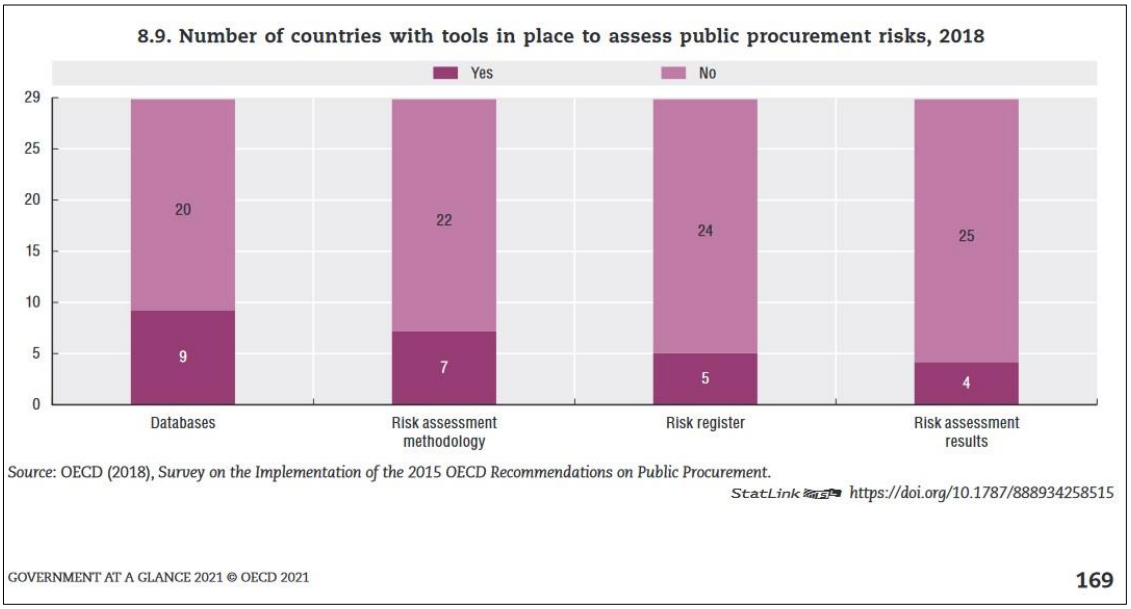
The next element or indicator, which was added because of the COVID-19 pandemic is – managing emergency procurement and risks. This indicator has shown quite interesting data. The data collected by OECD shows that prior to the pandemic, only a few countries, such as Finland, already had a public procurement strategy in place as part of crisis preparedness, for instance through stockpiling (OECD, 2021). Majority of countries have been forced to rethink their risk management strategies and put measures in place that can be activated in the event of a shock. In relation to that, the data shows that 14 countries (46.7%) introduced temporary public procurement regulations (e.g. France), or developed additional COVID-19 legislation with specific public procurement provisions, as Slovenia did (OECD, 2021). On the other hand, 25 countries (86%) have developed specific guidance to support public buyers conducting procurement during the crisis, from detailing emergency procedures to implementing changes in ongoing contracts or using specific payments terms, as done in Austria (OECD, 2021). Further, 19 out of 29 OECD countries (63.3%) have increased the co-ordination or centralization of the procurement of essential goods, including not just health products but also IT equipment and services. For example, Belgium has set up a task force to monitor supplies and communicate orders, while in Italy, Consip, the Italian central purchasing body, was given the mandate to centrally procure goods and services needed to respond to the crisis (OECD, 2021).

When it comes to tools for assessing public procurement risks, based on the data from the 2018 OECD survey on the implementation of the OECD recommendation on Public Procurement of the 2015, it is concluded that 43% of respondents still do not have any tools to assess public procurement risks (OECD, 2021). The data shows that, when it comes to the tools that have been

[2] Source: Government at a Glace 2021, OECD.

implemented, 9 out of 29 OECD countries (31%) had developed risk databases, 7 (24%) had a risk assessment methodology, 5 (17%) have a risk register and 4 (14%) have risk assessment results. For example, in New Zealand, mandated government agencies must follow guidance on assessing and managing risks, which foresees different obligations, including submitting information on management of high-risk contracts for critical services.

Figure 3 - Number of countries with tools in place to assess public procurement risks[3]



This indicator has shown that proper public procurement risk strategy and tools are vital for avoiding or at least reducing possible negative effects of a crisis. Why this particular element of public procurement is important now than ever, will be explained in the following part which analyzes the impact of crisis.

EBRD – Capacity Building Assessment

The European Bank for Reconstruction and Development (EBRD), as an international financial institution has developed a capacity assessment tool kit, also known as Institutional Capacity Assessment (ICA). The ICA is an integral part of the Institutional Capacity Building (ICB) and Outreach Programme (CTOP) launched by EBRD in 2010 with the objectives of: a) evaluating the procurement capability of Clients, b) assessing the risks (institutional, political, organizational, procedural, etc.) that might affect the Client in carrying out the procurement process and (d) developing an action plan to be implemented, as part of the project, to address deficiencies detected by the capacity analysis and to minimize the risks identified by the risk analysis (EBRD, 2011). This toolkit has been since then mostly used in countries outside the EU (Serbia, Albania, Ukraine etc.).

The toolkit has 62 items or indicators grouped in nine categories to be assessed in the Client and in the project. These nine groups are: a) legal framework b) organization c) support and control d) staffing e) record keeping f) procurement planning g) procurement cycle h) general assessment i) project assessment (EBRD, 2011). It should be noted that for each item/indicator there is a corresponding standard of compliance and the majority of standards of compliance are taken from the Methodology developed by the OECD for government procurement. Taking into account all

[3] Source: Government at a Glace 2021, OECD

these categories it is possible to conduct a gap analysis, which has the objective of identifying priority areas for improvement regarding the institutional capacity. Based on the full-fledged assessment or its simplified version risk categories (high, moderately high, moderately low and low) of the client will be defined. After the risks have been classified mitigating measures will be defined, followed by the previously mentioned Action plan and Supervision plan. In other words, the aim of this toolkit is to have a comprehensive internal capacity assessment before commencing any action.

Additionally, this toolkit provides a valuable insight into which areas of opportunity are most frequent. For example, it has been verified that procurement planning is not used as management tool. This is reflected in the sense that a procurement plan should be used for e.g. adequate procurement packaging, forecasting of future requirements, controlling and keeping inventories (EBRD, 2011). Even though there is no available standard for this, it is important to have this objective of using a procurement plan as a tool for properly managing the preparation, implementation, monitoring and other planning activities.

Regardless of the fact that this has been developed more than 10 years ago and it is mostly focused on assessing the Clients capacities, this toolkit provides insight on how to conduct a capacity assessment, to identify the risks and mitigate them with an action plan. In order words, the framework from this toolkit could be used as a model for establishing a proper public procurement preparedness in each country.

3. Impact of COVID-19 crisis

COVID-19 pandemic has caused many negative effects, from which the most visible one was the lack of necessary medical equipment. Due to the lockdown measures that were applied in all the countries in the world, supply chains of medical equipment were temporarily disabled which caused higher demands and therefore higher prices, which all together resulted in bottleneck situations. Also, it must be taken into account that the majority of countries are importing medical equipment rather than producing it. This was the issue with face masks. This medical gear was the cause of disputes among countries. For illustration, United States were accused by Germany and France for using "wild west" methods. Precisely, Germany has accused United States of confiscating face mask en route in Thailand and then diverting them to the US on April 3, even though they were paid by Germany (Ankel, 2020). France accused the United States of outbidding at the last moment, i.e. the masks were reportedly already on a plane bound to leave the airport in Shanghai when US buyers turned up and offered three times the amount the French were paying (Ankel, 2020). On the other hand, there was a similar case in the EU, where France confiscated an estimated six million masks from the Swedish company Mölnlycke (Marlowe, 2020). As stated, these masks had been contracted for, including a million masks each for France, Italy and Spain, while the rest were destined for Belgium, the Netherlands, Portugal and Switzerland, which has special trading status with the EU. Since Italy and Spain urgently needed their masks, Mölnlycke tried to cover the loss of the confiscated masks by ordering more from suppliers in far east Asia. In the end, France allowed two million masks which Mölnlycke had contracted to deliver to Italy and Spain to be shipped and the French media reported that France donated one million masks to Italy in the spirit of solidarity. Similar situation happened with the ventilators, which is followed by the story that US manufacturing company 3M confirmed on April 3 that the Trump administration ordered it to stop exporting its ventilators from its US production sites to Canada and Latin America, while in the end than ban was only temporary (Ankel, 2020).

The most extreme situation was acquiring the vaccines. Unfortunately, the majority of countries were not able to acquire more than one or two types of vaccines. It also came to financial power and negotiation position. Precisely, wealthier countries, as well as the ones in which vaccine manufactures have their production facilities, were able to acquire vaccines much quicker. For illustration, only three countries in the world were able to acquire vaccines already in May 2020, i.e. United Kingdom was the first country to buy 90 million doses of AstraZeneca, followed by United States with 300 million doses of AstraZeneca and 10 million doses of Novovax and Israel bought 2 million doses of Moderna (Evershed et al., 2021). There was also an example in 2021 when Italy blocked export of 250,000 AstraZeneca vaccine doses to Australia, because the company failed to deliver the required amount because of production problems in one of its EU sites (Boffey, 2021). The peak of distribution problem was that EU and United States blocked the proposal made by South Africa and India at the World Trade Organization that would waive intellectual property rights for COVID-19 vaccines and treatments (Gebrekidan & Apuzzo, 2021). This illustrates how different policies and actions affect the entire chain of public procurement. However, there were examples of countries which have managed to avoid these issues. That was the case with Serbia, which was able to use the vaccine diplomacy to acquire four types of vaccines: China's Sinopharm, Russia's Sputnik V, Pfizer, and AstraZeneca. In addition to that, Serbia has managed to arrange the beginning of the production of the Russian vaccine Sputnik V in Serbia (Government of Serbia, 2021). Besides that, Serbia took additional measures to stop the spread of COVID-19 by financing innovative product and services. Precisely, the Innovation Fund of Serbia in May of 2020 approved 53 million dinars (450.757 euros) for financing 12 innovative projects developed by domestic companies (Innovation Fund of Serbia, 2020). These solutions were developed in one month and made available for use, with the goal of suppressing the effects of the coronavirus pandemic. It is worth mentioning that all innovative projects have been donated throughout Serbia to organizations and institutions of public importance. Some of those innovations were: reusable protective masks, system for fast 3D printing of urgently needed parts for machines and medical devices, devices for mechanical ventilation of patients with positive pressure, disinfection tunnel and disinfection cabin, UV-C disinfection etc. This example represents pre-commercial procurement, because through this program a domestic market was created in order to provide the possibility for contracting authorities to procure these healthcare innovations.

4. Impact of war conflict in Ukraine

Since the COVID-19 pandemic, the world has changed significantly and one could say that other challenges such as global warming (floods, drought, wildfires etc.) or other virus pandemics, that are highly likely to occur in the future, will cause tremendous damage in the future if we do not organize ourselves properly for them. However, another crisis has caused a tectonic change. It is the war between Ukraine and Russia. This conflict has caused many consequences, besides the loss of human lives and the huge refugee crisis. The most disruptive consequence is the energy crisis which is still present. Because of the war conflict EU has sanctioned Russia, while Russia has retaliated by forcing EU countries to pay in rubles for the gas that is transported from Russia to EU member states. The issue with this is that 35% of gas in EU is imported from Russia and for some EU member states Russian gas represents 100% share which makes Russia the largest if not the main supplier. According to the Center for Strategic and International Studies (CSIS) Ukrainian transit of Russian gas has been reduced by 70%, from over 140 billion cubic meters (bcm) in 1998 to less than 42 bcm in 2021 (Chestney, 2022). Even though, some countries can and could import gas from other countries, like Germany has the possibility of importing from Norway, the Netherlands, Britain and Denmark via pipelines, the issue is that this cannot fully replace the

missing supplies from Russia (Chestney, 2022). This situation has caused the spike of gas price which is for some countries an additional financial burden as well as a challenge to their utility infrastructure that is hard to resolve because of the prior COVID-19 pandemic. Simultaneously, this energy price increase has affected the prices of other available commodities and, therefore, the majority of contracting authorities are forced to restructure their public procurement budget.

This energy crisis caused many countries in the world to reconsider their energy strategy. Since the EU is planning to become "net zero" by 2050 and to reduce the dependence from Russian oil, coal and gas, a recent study by Eurometaux (umbrella association representing voice of non-ferrous metals producers and recyclers in Europe) has determined that Europe's plans to establish domestic production for clean energy technologies will increase its demand for a wide range of metals. Precisely, when it comes to aluminium and copper, by 2050, Europe will require new demand equivalent to 30-35% of today's consumption levels for manufacturing of electric vehicles, electricity net-works, batteries, wind turbines, and solar panels (Eurometaux, 2022). The largest demand is with battery metals, i.e. by 2050, batteries will be Europe's major use for lithium, nickel, and cobalt under all the study's scenarios, with new demand reaching up to 3500% of Europe's lithium consumption today, 350% of cobalt, and 110% of nickel (Eurometaux, 2022). When it comes to rare earth minerals, which are required for electric vehicles and wind turbines, it is concluded that even a moderate level of European domestic magnets production - as reflected in the study's medium scenario - would transform the European rare earths market, requiring between 90% and 200% extra compared with Europe's consumption today (Eurometaux, 2022). At the end, it is concluded that Europe's main opportunity is recycling. However, it is pointed out that recycling will not provide Europe with meaningful supply for many metals until after 2040 when high volumes of clean energy technologies start reaching their end-of-life (Eurometaux, 2022). Therefore, there will be a need for importing primary metal but from diversified, responsible partners and in accordance with fair trade. Lastly, the change will occur only through innovation, substitution and shifting towards shared economy. This study has shown that contracting authorities and especially the utility companies, must carefully reassess their long-term strategies for achieving carbon neutrality, since it has to be implemented through public procurement which requires proper market analysis, estimates and implementation strategy.

Besides the energy crisis, another issue has emerged, and that is the food supply. Ukraine and Russia are the largest wheat producers in the world, i.e. in 2019 together they exported more than a quarter (25.4 percent) of the world's wheat, according to the Observatory of Economic Complexity (OEC) (Duggal & Haddad, 2022). Because of the war conflict many countries have difficulties of acquiring this commodity. Additionally, this conflict caused a shortage of fertilizer. Precisely, Russia and Ukraine together export 28% of fertilizers made from nitrogen and phosphorous, as well as potassium, according to Morgan Stanley (Domm, 2022). Also related, Russia and Belarus had provided about 40% of the world's exports of potash, according to Morgan Stanley (Domm, 2022). This issue is an additional burden for contracting authorities beside the energy price increase, which again points out that contracting authorities need to focus more on proper risk assessment and risk mitigation which contributes to proper public procurement preparedness.

5. Criteria for establishing the optimal governance model for public procurement

The crisis and extreme emergency situations in the past, present and mainly the ones that will come in the future raised the question – what is the right criteria for defining an optimal governance model for public procurement? The meaning of the word "optimal" in the Cambridge Dictionary is: "*best or most likely to bring success or advantage*" (Cambridge, 2022). Different

methodologies, which were presented previously, have shown that depending on the objective of the methodology for evaluating public procurement, certain criteria will be more relevant than the other in order to define an optimal model. However, since public procurement, as mentioned before, is an activity which is focused on acquiring the data, analyzing the data (which is implemented through procurement planning e.g. market research, defining the needs etc.), using the data (e.g. technical specification, selection criteria, award criteria) and verifying that data through monitoring and control, it is necessary to reconsider which criteria is relevant for evaluating if the optimal governance model for public procurement is established or not.

The first category/criterion which represents the main frame, or the main structure is the legal framework. Even though, the legal framework is a standard element of analysis, in the previous methodologies certain aspects were neglected. None of these methodologies have precisely measured the impact of the legal framework. In the EU, since all member states have harmonized their legislation with the EU directives, it has not been measured how many member states have used certain possibilities which are available within the Directives. For illustration, the EU directives state that the main goal for awarding the contract is to use most economically advantageous tender (MEAT) criteria. In practice, the contracting authorities have discretional right to determine in which case which procurement method and corresponding award criteria will be used, based on the subject of public procurement (except for innovation partnership and competitive dialogue where the award criterion is best price-quality ratio). In the EU only few member states have used the possibility to specify in their national legislation in which sectors price, as the only award criterion, cannot be used. In relation to that, according to the methodology of the EU for indicator 5 – award criteria which measures the proportion of procedures awarded solely based on the cheapest offer, shows that Croatia has been for two years the leader since only 1% of procedures were awarded based on price criteria only (European Commission, 2022). In order to understand this situation better, it is relevant to know that the Croatian Law on public procurement stipulates that the award criterion is MEAT. However, when analyzed carefully it is stipulated that public contracting authority cannot use only price or cost as the only criterion for awarding the contract, in which case the relative weight of the price or cost must not exceed 90% (Article 283, Law on public procurement Croatia). This means, that even if there are two criteria for awarding a contract, price cannot be more that 90%. Due to a lack of precise data it is hard to determine how much the price was more dominant than quality, e.g. the best price-quality ratio was 70% price and 30% quality or in 50% of procedures the award criteria was 90% price and 10% quality. This is especially important because if there is no proper view on how a legal framework is set up it will be difficult to give a precise conclusion. Details matter the most since they can indicate if there is a significant hurdle or support for optimal public procurement. Besides this, the EU methodology does not analyze if EU member states have established mechanism for market consultation. This is relevant since the dominant use of price as the only award criterion and the lack of market dialogue hinders competition. Therefore, it can be said that this criterion measures if the legal framework is contributing or reducing the chances for achieving the goal of value for money by fostering the use of other award criteria different from price, since it is determined that price cannot be the only award criteria in order to acquire quality as well as if proper market dialogue has been well established or not.

Also, when analyzing the MAPS methodology, for example in Norway, it is indicated that with regards to evaluation and award criteria, the Norwegian legal framework follows the EU rules including the obligation to specify award criteria, attributes like price, non-price aspects and life cycle costs, specifications for consulting services, the relative weighting which it gives to each of

the criteria chosen, and process (MAPS, 2018). This may seem clear, however, we do not have a clear indication on, for example how many contracts were awarded only on price basis and how many on quality and price etc. Only in a recent study which has a comparative analysis of EU Member States during COVID-19 it was revealed how much was price or MEAT criterion was used (Tavares & Aruda, 2021). On the other hand, the OECD methodology shows a clear picture of the size of public procurement spending as a percentage of GDP, but it also does not show if the award criterion was based only on price or price and quality.

The second category/criterion, which is related to previous one, is the functionality of the e-procurement system. Previous methodologies have demonstrated that e-procurement is relevant for transparency and efficiency. The OECD methodology analyzed among OECD countries if the e-procurement system covers the entire process, i.e. from the planning and budgeting, conducting procurement procedure (electronic submission of the bids, invoices etc.) contract management, etc. However, the MAPS methodology was the only which was analyzing if the system can cover all levels of procurement (central level, decentralized level and also procurements that are below the threshold) and has stated that in the case of Norway at the time of conducting that analysis the issue was to gather all information and present in a coherent way. Further, it is important to address the procurement in the emergency situation cases, since the precise data for this is lacking. The system must allow, at least for the central level and contracting authorities to cover these cases.

The third category/criterion is the public procurement data. It is required that a well-established e-procurement system provides the necessary data. Precisely, the public procurement data must contain: number of contracting authorities; public procurement plans of contracting authorities; number of awarded contracts; number of procedures that were implemented or terminated; used award criteria and in that regard – was it price, cost, price and quality/cost and quality, green criteria, social criteria; a special part should be dedicated to innovation procurement; procurement sectors (health care, construction, defense etc.); average number of bids; database of bidders that have been awarded the contract; contract management, which should show real time implementation (if there were changes to the contract, price, parties etc.) and there must be data on public procurement that are below the defined thresholds. As mentioned in the MAPS methodology it is necessary to have as much data as possible in order to properly determined the current situation. This is relevant for complying with the principle of transparency, but also efficiency. One aspect that is more important than before is measuring innovation acquired via public procurement since the challenges that lay ahead in relation to energy stability, waste management, health care, food production can only be solved by innovative solutions. The current methodologies do not provide data for this.

The fourth category/criterion is strategy and risk management in public procurement. The MAPS methodology indicated in the Norway example if there is a lack of data it is hard to properly prepare for the future, or in other words it is difficult to compose a detailed short-term or long-term strategy. In a similar manner, the EBRD capacity assessment toolkit points out that procurement planning should be used as a management tool for e.g. forecasting of future requirements, controlling and keeping inventories. Also, the OECD methodology demonstrated that during the crisis only few countries had strategies for resolving crisis situations. The COVID-19 pandemic has shown that countries must assess their capabilities for resolving a crisis.

Taken into account all these categories/criteria we can say that the optimal governance model for public procurement is established when it allows the contracting authority, or state in general, to:

fulfill all its defined needs in accordance with the value for money principle in an efficient and transparent manner and provide enough resilience so that it can avoid or at least reduce the potential damage from unforeseen event.

6. Maintenance of the optimal governance model

When discussing the issue of maintaining this optimal governance model, it is relevant to point out the following. The four categories/criteria are interconnected. One will have a larger effect on the other, but they all together contribute to achieving the optimal governance model for public procurement. There are several requirements that have to be fulfilled for successful maintenance.

The first requirement is that identified gaps in the legal framework have been mitigated. Unresolved gaps in the legal framework will only hinder the process of optimal governance of public procurement. For example, even though in the EU all member states have harmonized their legislation, there are still legal difference between them. Only few member states in the EU have used the possibility of limiting the use of price as the only award criterion, as well as that not many member states do a proper market research and consultation. This requirement is also related with the level of centralization/decentralization and their ability to adapt to potential changes and carry out defined tasks. In some EU countries, a central body was responsible for procuring the necessary medical equipment, while in other countries that was not the case. For illustration, Germany had serious issues with resolving the COVID-19 pandemic since its legal system allowed for each German state to impose COVID-19 restrictions at their own pace. The outcome of this type of system was disparity among the states in Germany as well as the lack of synchronization in tackling COVID-19. Therefore, the main requirement is that a detailed capacity assessment of the current legal framework has been done, that all the legal gaps/risks have been identified and that the action plan for mitigating them has been successfully implemented.

The second requirement is that public procurement planning is aligned with the local/national strategy and risk management. If there is no well-established strategy which involves all the relevant stakeholders and if the responsibility is not properly divided so that each risk is being handled by the party who has the most experience, it will be difficult to avoid or even mitigate potential damage that could occur in the future. It is important that public procurement planning has been framed and it is used as a strategy and risk management tool, in accordance with the action plan for mitigating the legal gaps. Additionally, it is relevant to have a good system of control (either audit, inspection, a government supervision board etc.) which can overlook the entire process.

The third requirement is that the e-procurement and public procurement data are used as supporting tools for public procurement. These two are related because if the e-procurement system is not set up in the most efficient way and does not gather all the necessary data, the overview of the public procurement system cannot be detailed and precise. This is relevant since the data that is acquired through this system affects the preparation of short-term and long-term strategies. Besides that, if the data if not verified it could cause more harm than expected. For illustration, if the contracting authority does not have a clear situation regarding the market or which need is a priority, time and resources are being wasted and chances for success are reduced. With that being said, it is an obligation for each country to further improve their infrastructure since technology is developing at a accelerated rate, so that the e-procurement can cover the entire process of public procurement as well as that the data can allow the contracting authorities to carefully set up goals for the future in order to avoid potential bottleneck situations.

7. Recommendations

Considering all the different methodologies and available data, recommendations for establishing and maintaining an optimal governance model for public procurement can be summarized in the following.

The first recommendation is that each country must conduct a proper capacity assessment of its public procurement system. The objective of this is to determine the current level of preparedness of the public procurement system by identifying all current and possible gaps/risk and compose and successfully implement an action plan for mitigating the risks. This should include stipulating in the law in which situations the contracting authorities must not use price as the only award criterion, compulsory market dialogue, resolving the issue of centralized and decentralized bodies etc. For example, the EBRD toolkit can be used as a reference model for establish the entire process for this activity companied by the MAPS methodology.

The second recommendation is that e-procurement system must be structured in a manner that is fully contributing to the contracting authority. This means that e-procurement must be framed and used as a tool to improve the entire process of public procurement and not just some aspects of it. It needs not only to cover the process starting from budgeting, planning, all the way to conducting, monitoring the contract execution, but it also must enable acquiring all the relevant data in a coherent way so that it could be used for reevaluating and future planning.

The third recommendation is that public procurement planning is used as a tool for establishing strategies and risk management. The emergency situations that have occurred in the previous period have, again, pointed out the importance of conducting proper public procurement planning with the goal of devising a long-term strategy, strategies for overcoming natural disasters, reducing bottleneck in relevant areas etc. The COVID-19 pandemic has demonstrated that only few have been prepared for emergency situations and many had false sense of preparedness. Also, the relevant task of reaching carbon neutrality requires long-term planning from 10 to 30 years which has to be conducted through public procurement and that requires thorough analysis and planning. Otherwise, it will be difficult to avoid the potential damage of severe climate change.

8. Conclusion

The crisis/emergency situations which occur every year because of one event or another, have demonstrated that regardless of the level of development of a country there are always challenges that need to be properly resolved.

The COVID-19 pandemic has pointed out that if a legal framework is not well established, e.g. if there is no regulation on how to handle emergency situations or certain aspects of it have been neglected, the majority of the system will be dysfunctional. The crises have shown that investments that were made through public procurement have to be reevaluated in order to see if they were done properly. For illustration, the size of investments (% of GDP) in the healthcare sector does not necessarily corelate with the preparedness to deal with an emergency. If there were no investments in overcoming potential emergency situations through proper strategy and risk management then there is a high probability of healthcare collapsing. Likewise, if the public procurement system does not have a proper e-procurement system which can cover the entire process as well as generating the all the necessary data in coherent way, it will hinder the state's ability to properly react in non-emergency situations, as well as significantly reduce its capabilities in emergency situations. Lasty, the food, energy and oil crises have again shown that proper strategic planning through public procurement is important for mitigating future risks.

Each country should have the main objective of establishing an optimal governance model for public procurement which must fulfill the following two requirements: a) it is able to fulfill all the defined needs of the state in accordance with the value for money principle in an efficient and transparent manner and b) it must provide enough resilience so that it can avoid or at least reduce the potential damage from unforeseen event.

In relation to the proper legal framework, which represent the basis of it, it is relevant that each country carefully assesses the level of preparedness of its public procurement system. This requires evaluating how much the current legal framework is contributing or hindering the implementation of the value for money principle, i.e. the use of other award criteria than price and market dialogue is mandatory. Each country in accordance with its current level of development must compose its own model which can be successfully implemented. Additionally, it is important to use public procurement planning as a tool for proper strategy and risk management. This is crucial since the lack of proper planning and risk management can cause more harm which will, consequently, cost more than it was anticipated. This will be especially relevant for achieving carbon neutrality goal which requires careful decision making. As mentioned previously, each country must first analyze current gaps and determine the best way for eliminating them when it comes to strategy and risk management.

When it comes to e-procurement, the country should choose either to establish a new or further improve the existing system so that it can cover the entire process in accordance with transparency and efficiency. The data which is generated by this system must be complete and verified since it will be used for creating short-term or long-term strategies. Therefore, it is important to conduct a proper market analysis for current technology solutions in order to select the one which can fulfill all demands.

To conclude, the proper level of preparedness of the public procurement system has to be derived from a thorough and well-designed framework which will not only contribute to mitigating future emergency situations, but it will also contribute to establishing a sustainable, optimal model of governance which will in the long-term resolve all the challenges that lie ahead.

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