

## Article

# The Impact of Globalization on Innovative Public Procurement: Challenges and Opportunities

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**Abstract:** Incorporating circular economy principles into forward-thinking public procurement strategies enhances sustainability through the promotion of resource efficiency, sustainable sourcing, and extended producer responsibility. This approach not only encourages innovation and collaboration among suppliers but also drives the development of solutions aligned with circular economy goals. The ultimate result is a more cost-effective and environmentally friendly outcome in procurement. This article seeks to investigate the intersection of circular economy principles within the framework of an innovative public procurement system. The study explores the influence of globalization on this innovative public procurement paradigm, addressing both the challenges and opportunities inherent in the process. The study conceptualizes Innovative Public Procurement (IPP) as a strategic approach where public entities acquire goods, services, works, and utilities, emphasizing an optimal balance between price and quality. The central goal is to generate innovative benefits for both entities and society, all while minimizing adverse environmental effects. Employing traditional research methods, including the monographic method, document analysis, and comparison, the study illustrates how public procurement practices can be opened to innovators, including start-ups and innovative SMEs. The findings shed light on the challenges faced by these entities in navigating the procurement landscape, while emphasizing the potential opportunities arising from the synergy between innovative procurement practices and the circular economy. By adopting a holistic perspective that considers the full lifecycle costs and environmental impacts of goods and services, procurement decisions can prioritize options offering superior long-term value. This contributes to the broader transition towards a circular economy, effectively minimizing adverse effects on the environment...

**Keywords:** circular economy; innovative public procurement; environmental impact; monographic method



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## 1. Introduction

Innovation Public Procurement (IPP) is a crucial tool to drive the transformation of our economy towards a green and digital economy. Adopted in the context of the communication on “A new European agenda for research and innovation—Europe’s chance to define its leadership position in technology” and the contributions of the informal leaders’ dinner in Sofia on 16 May 2018, the present guidelines are updated following the adoption of the European industrial and SME strategies (EU COM102 2020) and the Recovery and Resilience Mechanism (EU, RRM 2021).

In the last 20 years, globalization has profoundly impacted innovative public procurement and has played an essential role in its reconfiguration at the governmental level, which is reflected in decisions, regulations, and laws. Moreover, as a result of the digital era, countries are becoming more interconnected, thus generating the exchange of ideas,

technologies, and good practices, which makes the harmonization of processes and legislation at the European and international levels increasingly important, an aspect that influences how governments approach procurement processes.

Moreover, through digital platforms, a significant aspect is access to a broader group of suppliers at the most optimal time. Therefore, globalization allows governments to source goods and services from all over the world, stimulating the competitive process, leading to more innovative solutions, and, in increased dynamism, permanently adapting to governmental and non-governmental needs. This event can be particularly beneficial in sectors where specific expertise is required, and which, practically in a very short time, the expertise can be made available to the applicant and with optimized resources from a financial, human, and time point of view, with effects directly reflected in productivity and efficiency indicators. The evolving landscape of globalization and digital transformation presents both opportunities and challenges for innovative public procurement, necessitating a nuanced approach to ensure fairness, transparency, and efficiency while fostering innovation.

In addition, sharing innovative procurement practices across borders has become increasingly present and available to all of us. Government authorities involved in the public procurement process learn from each other's successes and failures, adapting and implementing strategies and legislative regulations that have proven effective elsewhere. This harmonization of ideas globally (including through academic databases) contributes to the evolution of procurement methodologies.

However, it is evident that challenges also appear in the dynamism of things. Ensuring fair competition and dealing with the issues of varying regulatory environments and standards can often be complex. Finding a balance between promoting innovation and maintaining transparency and accountability is an ongoing challenge for government authorities involved in globalized or local (European and national) procurement. In addition, the need for effective communication and collaboration between government authorities involved in the procurement process (which regulates) and suppliers from different cultural and linguistic backgrounds becomes crucial. Overcoming language barriers and understanding diverse business practices are integral to successful global procurement processes.

In short, globalization as an essential factor in the public procurement process has positive and challenging implications, especially for innovative public procurement. It opens up opportunities for increased competition and the exchange of innovative ideas but requires scrutiny of various complexities to ensure fairness, transparency, and efficiency in the procurement process. Moreover, harmonizing regulations at the territorial level is often the balance point regarding the transposition of innovations in public procurement, i.e., the transposition of EU directives and the adoption of regulations in the public procurement legislation of the member states. Exploring the literature on innovative public procurement reveals a rich array of research and insights. Scholars and practitioners have delved into various aspects, shedding light on the dynamics, challenges and benefits associated with the intersection of innovation and public procurement.

Scholars such as Caldwell and Howard emphasize the need for a clear definition of innovative public procurement (Caldwell and Bakker 2009). They argue that a shared understanding is fundamental to practical implementation. Another relevant aspect at the level of public procurement is the factors that generate innovation in the reference field. Research by Aschhoff and Sofka (2009) identifies key drivers of innovation in public procurement, including technological advances, increased competition, and an increasing focus on sustainability. The public procurement process also determines barriers and challenges. Several studies, such as the work of (Brammer and Walker 2011), highlight the barriers to innovation in public procurement. These include bureaucratic obstacles, risk aversion, and lack of skills and resources. Furthermore, case studies and good practices examine successful examples of innovative public procurement. The experiences of cities such as Barcelona and Helsinki in implementing smart city solutions provide valuable

information for other municipalities both at the European and global levels, and these best practices create a multiplier effect at the global level.

Specialized works on sustainable procurement (Demircioglu and Vivona 2021) and (Manta et al. 2022) reflect the role of public procurement in promoting sustainability. This work includes integrating environmental and social criteria into procurement processes. With the rise of digital technologies, researchers such as (Smith 2005) delve into the implications of digital transformation on public procurement. The adoption of e-procurement systems and blockchain technology is explored in this context.

A study by Spekman et al. (1998) emphasizes the importance of collaboration and networks in stimulating innovation in public procurement. Building partnerships with suppliers and leveraging external expertise are identified as key strategies. Moreover, Hughes et al. (2018) address the challenge of evaluating the success of innovative public procurement initiatives. A focal point is to develop appropriate metrics that go beyond cost savings to measure the broader impact of innovation. Researchers, including Arrowsmith et al. (2010), explore the legal and ethical dimensions, emphasizing the need for a legal framework that supports rather than hinders innovation. Issues of fairness, transparency, and accountability are central to these discussions. Recent work by researchers such as Li (2013) and Manta et al. (2022) explores emerging trends, including artificial intelligence, big data analytics, and the circular economy, in shaping the future of innovative public procurement.

Hence, this study tries to observe how are innovative public procurement processes influenced by the dynamics of globalization and digitalization by using monographic method, document analysis and comparison. Despite the growing attention towards innovative public procurement, notable research gaps exist that warrant further exploration. Firstly, while studies have extensively examined the benefits of IPP, there is a need for a deeper understanding of the specific mechanisms through which globalization and digitalization influence these practices. This includes exploring how globalization shapes supplier dynamics, procurement strategies, and regulatory frameworks across different jurisdictions. Secondly, existing research often overlooks the challenges faced by small and medium-sized enterprises (SMEs) in navigating globalized procurement processes. SMEs play a crucial role in driving innovation, yet they may encounter barriers, including limited resources, regulatory complexities, and unequal access to global markets. Understanding and addressing these challenges are imperative for fostering inclusive and sustainable innovation ecosystems. Thus, addressing these research gaps requires interdisciplinary approaches that integrate insights from economics, law, political science, and management studies. By bridging these gaps, the study contributes to the development of more effective and equitable policies and practices in IPP.

This paper tries to address these research gaps first, by investigating how globalization influence IPP processes. Second, it tries to examine the challenges and opportunities faced by government authorities and SMEs in navigating globalized procurement environments. Third, it tries to assess the economic, social, and environmental impacts of IPP practices. Lastly, it provides evidence-based insights to inform policymaking and practice in the field of IPP.

As a result, the literature on innovative public procurement covers a diverse range of topics, reflecting the multidimensional nature of this field and that of innovations in public procurement. As governments strive to balance the imperative of innovation with the principles of transparency and equity, ongoing research continues to provide valuable insights for policymakers and practitioners alike.

The structure of this paper is as follows. The following section structures the literature review where the authors provide an extensive framework on how innovative public procurement is directly influenced by innovation and globalization. The third section discusses the data and methodology that the paper uses. The fourth section provides a thorough analysis and discussion of the results of the study. The last section concludes and suggests future recommendations.

## 2. Literature Review

Along with the mentioned references, we want to rework our work with valuable sources related to innovative public procurement, such as the work (Edquist et al. 2015), which provides a comprehensive overview of the concept of procurement public for innovation, exploring theoretical foundations and practical applications. Andhov et al. (2020) and Caranta (2010) focus on the European context. This paper examines how EU public procurement directives have influenced and shaped innovation practices at the national level.

Piga (2017) presents in his paper aspects of the transformation of public procurement, including the role of innovation, in a global context. Moreover, he develops in his exposition elements about the challenges and opportunities presented by globalization.

In their work, Thai (2017) cover various aspects of public procurement, including innovation. It provides a comprehensive resource for researchers and practitioners interested in understanding the complexities of procurement processes. Relevant in the specialized scientific literature are the case studies and lessons learned from different countries presented (Piret et al. 2017), offering perspectives on how innovation can be integrated into public procurement practices.

Andhov et al. (2020) explore future trends in public procurement, including the role of innovation, sustainability, and the evolving legal and policy landscape. This book analyzes how institutions influence and shape innovation in public procurement processes. Bason (2018), although not exclusively focused on procurement, this book discusses innovation in the public sector, providing insights into how government organizations can drive innovation, which is relevant to the procurement context. Li (2013) explores the role of electronic procurement systems in the modernization and innovation of public procurement processes. Eggers and Singh (2009) provide valuable insights into fostering innovation in government that may apply to public procurement contexts. Green Public Procurement, as articulated by the researchers (Crovella et al. 2023), refers to procurement processes that encompass both environmental considerations and technologies throughout the entire procedure, embodying a commitment to eco-friendly purchasing.

Public procurement has been identified as a key driver in the transition to a circular economy, with the potential to promote circular business models and reduce market fragmentation (Alhola et al. 2019; Cattolica 2018). However, there are challenges in its implementation, such as the need for clear-cut agreements and the prevention of corruption and opportunistic behaviors (Bao et al. 2019). In the construction sector, the use of available tools for circular economy implementation in public procurement is limited, despite existing regulations (Plebankiewicz 2022). Despite these challenges, public procurement can play a significant role in promoting a circular economy, particularly in product groups such as furniture and ICT equipment (Cattolica 2018).

These references cover a range of perspectives on innovative public procurement, from legal and institutional aspects to practical applications and case studies. Moreover, these references provide a solid basis for exploring the topic within our paper, being the starting point in developing the research results within the paper.

## 3. Data and Methodology

In this paper, we present a thorough exploration of the impact of globalization on innovative public procurement, elucidating both the challenges and opportunities associated with this dynamic. To conduct this study, the authors employed a range of traditional research methods, namely the monographic method, document analysis, and comparison. These methodological choices were thoughtfully made to ensure a comprehensive examination of the subject matter.

Thus, based on the results of the literature, the study builds on the following hypotheses:

1. Increased globalization leads to greater competition among suppliers, resulting in the exchange of innovative ideas and technologies in public procurement.

2. Digitalization enhances the efficiency of procurement processes, enabling access to a wider pool of suppliers and facilitating the implementation of innovative solutions.
3. Despite the benefits, globalization and digitalization pose challenges such as ensuring fair competition, navigating varying regulatory environments, and overcoming communication barriers between diverse stakeholders.
4. Innovative public procurement practices are more prevalent in regions or countries with advanced digital infrastructure and a strong commitment to globalization.

The monographic method, a central component of our research approach, involved a meticulous analysis of documents, studies, and reports cited in both the literature review chapter and the references section. This method allowed us to delve deeply into the existing body of knowledge and critically evaluate the insights provided by various sources.

To yield the results, the authors employed specific traditional research methodologies, namely the monographic method, document analysis, and comparison. Each of these methods played a distinct role in obtaining the outcomes of the study:

**Monographic Method:** Through the monographic method, the authors extensively reviewed both scientific and applied literature pertaining to the chosen subject of their research. This involved a thorough examination of relevant materials, as evidenced in the literature review chapter and research results. This method facilitated the structuring of results to ensure a comprehensive understanding of the investigated subject.

**Document Analysis:** The method of analyzing the investigated documents served as a foundational approach in the research. It entailed a systematic examination and evaluation of documents aimed at addressing the research question and established hypotheses. This analysis of documents enabled the presentation of valuable information and the organization of study conclusions derived from sources cited and available in specialized scientific literature.

**Comparison:** The authors utilized the comparison method to assess similarities and differences among various elements, such as cases, situations, or approaches, relevant to their research. This comparative analysis extended to various aspects of the study, allowing for the identification of trends and variations that significantly contributed to an enhanced understanding of the research topic.

In summary, the authors applied the monographic method for a comprehensive exploration of their research topic—specifically, the impact of globalization on public procurement. They utilized document analysis to derive insights from written materials and employed the comparison method to evaluate opportunities and challenges. These traditional research methods collectively played a crucial role in generating the results for their study.

The study's findings, derived from the systematic analysis of documents, reports, and case studies, robustly affirm the assumption that public procurement serves as a pivotal lever in the effective implementation of Innovative Development Strategies and Policies. By applying the monographic method, we scrutinized a wide array of literature and references, enhancing the credibility and reliability of our conclusions.

Highlighting the significance of public procurement in fostering innovation, particularly through the procurement of innovative solutions, our study underscores the role of the Innovative Public Procurement (IPP) in driving the broad dissemination of inventive solutions within the market. The IPP not only generates demand but also acts as a catalyst for industry investment in extensive commercialization efforts, ensuring the delivery of innovative solutions to the market with the requisite quality and cost effectiveness.

Consequently, our research posits that in the public sector, the adoption of innovative public procurement practices leads to the modernization of public services. This approach not only provides solutions that offer added value for money but also presents enhanced growth opportunities for companies. The insights drawn from this study contribute to a nuanced understanding of how globalization influences innovative public procurement, shedding light on its multifaceted impact on both challenges and opportunities in the realm of public policy and economic development (EU-GPPI 2021).

#### 4. Results and Discussion

Public authorities that support the innovation process or the purchase of innovative goods and services are directly granted improved services at optimized costs. For this reason, the introduction of innovation becomes efficient and effective in the direction of modern, more competitive, and more sustainable societies.

For the purposes of Directive 2014/24/EU, Article 2(22) defines “innovation” as “the creation of a new or significantly improved product, service or process, including but not limited to manufacturing, building or construction, of a new method of marketing or a new method of organizing business practice, the workplace or external relations, among others, with the aim of contributing to solving societal challenges or supporting the Europe 2020 strategy for smart growth, ecological and favorable to inclusion” (Directive EU 2014). In the Oslo Manual 2018 (OECD 2018), the OECD defines innovation as “a new or improved product or process (or a combination thereof) that differs significantly from the establishment’s previous products or processes and that has been made available to potential users (as a product) or put into operation by the unit (as a process)”. By definition, innovative public procurement is the purchase of a new or better product or service that improves the productivity, quality, sustainability and impact of the public sector. In innovative public procurement, the object can be represented by results, effectiveness, performance, quality or operational requirements (EU COM103 2020).

Public procurement of innovative solutions takes place when the public sector uses its purchasing power to act on innovative solutions that are not yet widely available (EU-GPPI 2021). The first step in using PPI is to build demand-side purchasing power (a large enough buyer or several smaller buyers in a group of buyers), one that can stimulate industry to expand production to bring solutions to the market with the demands of price and quality for large-scale implementation. For the second stage, acquirers make an early announcement of innovation needs (with required functionality or performance and possibly also price requirements) (EU-GPPI 2021). They express their intention to buy innovative products if the industry can bring them to market with the price/quality requirements by a certain date. Buyers can perform conformity testing of solutions from suppliers who have already submitted potential solutions by the pre-set target date to verify that there are solutions that can meet their needs, before actually procuring the innovative solutions. The third step is the public procurement of innovative solutions through one of the already existing public procurement procedures (e.g., open or negotiated procedure, competitive dialogue, etc.).

IPP is therefore complementary to pre-commercial procurement (PCP), as IPP can enable the larger scale implementation of solutions that were developed in small quantities in a previous PCP. IPP can be used to bring to market innovative solutions that do not result from research and development, but from organizational or process innovation.

By creating a stable demand for innovative solutions through public procurement, we derive the following advantages (EU, SBSPPSIDE 2021):

- Modernization of public services with higher quality and more cost-effective solutions;
- Stimulating a new niche market for innovative solutions, helping innovative companies achieve economies of scale to grow their business.

The innovative part consists of the optimal choices of the procedure, the criteria and the evaluation method, the sustainable encouragement of innovation, the establishment of long-term partnerships with the providers of innovative solutions, goods or services, the organization of extended purchases for several beneficiaries (among one area/national level/cross-border level), use of SEAP and DUAE, organization of procurement, award and contracting procedures (EU, SBSPPSIDE 2021).

The innovative procurement procedure must be the following:

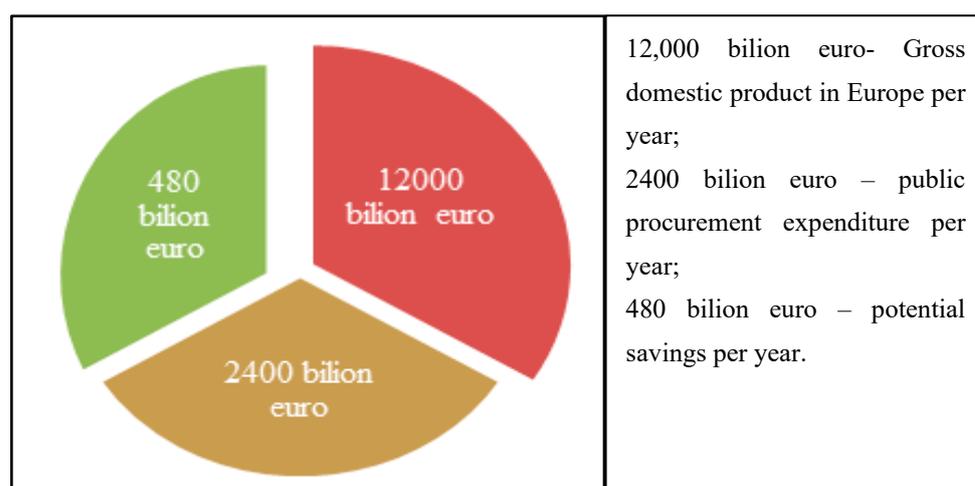
1. Optimized according to the specifics of the initiated purchase,
2. Optimized from the point of view of society’s requirements,

3. Well-organized from the point of view of respecting the basic principles and all procurement legislation,
4. Completed with optimal long-term benefits for society.

Innovation procurement empowers public authorities to obtain pioneering, innovative solutions customized to their specific needs. It helps local and central governments to provide taxpayers with the best possible quality services, while at the same time saving costs. The European public sector faces significant public interest challenges, like health and ageing, climate change and energy, and resource scarcity. The public sector is also under pressure to modernize internal operations while delivering high quality public services. Innovation procurement can deliver solutions to these challenges and Information and Communication Technologies (ICT) play a major role in this. Public procurers have a lot to gain from innovative procurement. It enables the public sector to modernize its services while saving costs and creating market opportunities for companies in Europe. Impact studies show that innovation procurement creates on average 20% cost savings on public procurement expenditure (which constitutes about one fifth of Gross Domestic Product (GDP) in Europe, or around EUR 2400 billion a year). Innovation procurement is also a way to foster growth and create new jobs, especially for the smaller innovative companies that are the backbone of the European economy, and which are ideally placed to supply these new innovative products and services.

The overall innovation policy framework across Europe is operating at just over a quarter of its potential. Thus, it was established that Member States that are at the forefront of innovation in general have also established a policy framework for public procurement in the field of innovation.

Therefore, strengthening investments in the development of a more strategic public procurement policy framework in the field of innovation in Europe could contribute to increasing the competitiveness of the European economy (EU-GPPI 2021). Figure 1 above shows the large-scale benchmarking of the national innovation procurement policy frameworks in the EU. In Europe, four Member States (Austria, Belgium, Finland, and the Netherlands) have adopted an action plan dedicated to innovative public procurement, and five other Member States (Denmark, Estonia, Greece, France and Sweden) have included specific objectives and concrete measures on innovation public procurement in broader national strategies or programs, often with a specific budget and a clear commitment from key actors.



**Figure 1.** Opportunities of IPP. Source: (European Transport Network Alliance 2020).

There are numerous objectives and initiatives regarding IPP both at the European and global levels (EU COM102 2020). Authorities around the world have set targets to allocate a

percentage of their public procurement budgets to research, development, and innovation, as shown in Table 1 below.

**Table 1.** PPI objectives and initiatives.

Nr.	Country	Objectives
1	USA	The US is working to allocate at least USD500 million (~2.5% of GDP) to R&D procurement, while South Korea aims to spend 5% of its procurement resources on development and 20% for the implementation of innovative solutions (EU-GPPI 2021). In Europe, there are national and regional targets. Usually, a percentage between 2–5% of public procurement is dedicated to the modernization of innovative solutions.
2	Ghent	The city of Ghent has set aside 10% of its ICT procurement budget for research, development and innovation. The “Scale up Europe” manifesto recommends minimum targets of 3% for pre-commercial procurement and 20% for public procurement of innovative solutions.
3	EAFIP, European Commission	The European Assistance for Innovation Procurement (EAFIP) initiative supports European public procurers in the development and implementation of innovation procurement. The aim of the EAFIP initiative is to promote good practice and strengthen the evidence base on innovation procurement completed across Europe, to encourage other public procurers to start new PCP and IPP procurements and to stimulate the recovery of the digital–green economy through procurement for innovation (PCP and PPI). Since the beginning of 2015, EAFIP has organized 12 successful events, created a knowledge-rich toolkit and 12 informative videos, and provided assistance to public purchasers in the development and implementation of their procurement for innovation. No fewer than 21 high-impact ICT-related solution innovation procurements have been supported through EAFIP to date. Across Europe, public purchasers are able to move forward with procurement for innovation.
4	Austria, Denmark, Romania, Ireland, Spain	The Innovation Procurement Brokers project was developed to facilitate the procurement of innovative goods and services by strengthening the links between demand-side public buyers and supply side innovative companies (EU COM103 2020). Public buyers were supported in identifying their needs and were connected with SMEs and start-ups capable of developing innovative solutions to meet their requirements. A total of five regional procurement schemes of innovation brokers were tested in the Region of Upper Austria, Denmark, North Rhine-Westphalia (Germany), Ireland and Andalusia (Spain), and then expanded to European level.

Source: (OECD 2018).

Human capital is the key strategic tool for ensuring success in the global economy. But Europe is considerably behind in the race to a knowledge economy. Recovering the gap will require a coordinated effort. Member States must mobilize the resources they have agreed to invest with the help of the private sector and reform all aspects of education, including vocational training. The Union must also act through its own revised budgetary instruments, while making better use of the European Investment Bank and the European Investment Fund. Finally, we must consider the possibility of initiating new sources of revenue, for example by imposing a carbon tax.

Innovative public procurement is a license to ensure a sustainable socio-economic development both at the local/national level and at the global level. The Republic of Moldova is making considerable efforts to reform the public procurement system, by introducing an improved e-procurement system and an online guide, which provides a set of tools and models to help authorities go through the entire public procurement cycle more efficiently. The representatives of our country must already put the innovation reform of public procurement at the center of their objectives, considering that this is the key to success in order to obtain quality and sustainable results. Procurement innovation is critical to maximizing all sustainable procurement outcomes.

#### *4.1. Case Study Presentation: Smart City Procurement in Copenhagen*

Copenhagen, Denmark, has been a pioneer in adopting smart city initiatives to improve sustainability, livability and efficiency. The city aimed to leverage innovative public procurement practices to address urban challenges and improve the quality of life for its residents. Objectives established by the governmental authority include sustainability: improve environmental sustainability by adopting smart technologies; efficiency: improving the efficiency of public services and infrastructure management; and innovation: foster innovation in the public sector by working with technology providers and startups.

Key elements of innovative public procurement include challenge-based purchases: Copenhagen adopted a challenge-based approach, identifying specific urban challenges such as traffic congestion, waste management and energy efficiency. Instead of specifying detailed solutions, the city defined the problems and invited innovative solutions from the market; innovative laboratories and pilots: the city has established living labs and pilot projects to test and evaluate innovative solutions in real urban environments; this enabled a more informed procurement process and reduced the risk associated with implementing untested technologies; collaboration with startups and technology companies: Copenhagen has actively engaged with startups and technology companies, encouraging collaboration and co-creating solutions. This approach facilitated the integration of cutting-edge technologies into the city's infrastructure; long-term partnerships: the city has prioritized long-term partnerships with suppliers, fostering relationships beyond individual procurement projects. This approach aimed to create a collaborative ecosystem for sustained innovation; and open data initiatives: Copenhagen has adopted open data initiatives, making relevant data accessible to potential providers. This not only increased transparency, but also empowered innovators to develop solutions based on real-time data.

**Results and impact:** reduced traffic congestion: intelligent traffic management solutions have resulted in reduced congestion and improved traffic flow, improving mobility for residents and visitors; optimizing waste management: innovative waste management technologies, including smart bins and sensors, have improved the efficiency of waste collection and recycling; energetic efficiency: the implementation of smart energy grids and building management systems has contributed to energy efficiency, reducing the city's overall carbon footprint; stimulating the innovation ecosystem: the challenge-based procurement approach and collaboration with startups have helped develop a vibrant innovation ecosystem in Copenhagen, attracting talent and investment.

**Lessons Learned:** flexibility and adaptability: a flexible and adaptable procurement process enables the integration of emerging technologies and changing urban needs; stakeholder engagement: engaging with a diverse range of stakeholders, including citizens, businesses, and academia, enhances the success and acceptance of innovative solutions.

**Strategic use of data:** the strategic use of data, both in the procurement process and in ongoing projects, is crucial to the success of smart city initiatives.

The case of Copenhagen illustrates how an advanced approach to public procurement, centered on innovation and collaboration, can transform a city's infrastructure and services, leading to a more sustainable and livable urban environment.

An innovative scheme in public procurement is the concept of "Partnerships for Innovation". Innovation partnerships are a procurement approach designed to facilitate

collaboration between the public sector and industry to develop innovative products, services or works that are not readily available on the market.

#### 4.2. Contributions, Limitations and Future Directions

The discussion on IPP highlights its crucial role in fostering innovation, improving public services, and achieving cost savings. By defining innovation in the context of procurement and outlining the process of IPP, the paper contributes to a better understanding of how public authorities can leverage their purchasing power to drive innovation. Moreover, the case study of Copenhagen demonstrates the practical implementation of IPP in a real-world setting, showcasing its effectiveness in addressing urban challenges and improving the quality of life for citizens.

The paper also underscores the importance of strategic partnerships, long-term collaborations, and the use of open data in facilitating IPP. By emphasizing these key elements, the discussion provides valuable insights for policymakers, public procurers, and industry stakeholders looking to enhance their procurement practices and promote innovation.

While the paper offers a comprehensive overview of IPP and presents a compelling case study, it may have limitations in terms of generalizability. The effectiveness of IPP may vary depending on factors such as the political regulatory context, the level of institutional capacity, and the availability of resources in different jurisdictions. Additionally, the case study focuses on Copenhagen, which may not fully represent the diversity of experiences and challenges encountered in other cities or regions.

Lastly, the next few areas we want to focus on are exploring the long-term impact of IPP on innovative ecosystems, economic development, and social outcomes. Longitudinal studies tracking the outcomes of IPP initiatives over time would help assess their sustainability and scalability. Additionally, comparative analyses across different countries or regions could shed light on best practices and lessons learned in implementing IPP in diverse contexts.

Finally, research could delve into the role of emerging technologies, such as artificial intelligence and blockchain, in enhancing the efficiency and transparency of IPP processes. Exploring how these technologies can be integrated into procurement practices would help unlock new opportunities for innovation and efficiency gains in the public sector.

## 5. Conclusions

The current regulations of the primary legal framework in Moldova—Law 131/2015—give the contracting authorities the right to include in the award documentation technical specifications with special conditions aimed at achieving social or environmental protection effects and promoting innovative development. However, there are no certain obligations in this sense and the decision ultimately belongs to the contracting authorities. It should be emphasized that even at the EU level, innovative public procurement is a non-binding instrument, which means that the decision to include sustainability aspects in the technical specifications of the goods, services or works belongs to the contracting authorities.

There are a number of funding sources that provide financial incentives to induce public purchasers to engage in innovative public procurement. Funding can cover many of the additional costs associated with innovative public procurement, such as the cost of procurement preparation and management, preliminary market consultation, negotiations, research and development, mobilization of specific technical or legal expertise, and administrative procedures. It can also offset the costs of cultural change and changing habits.

Thus, innovative public procurement addresses aspects of how they bring the greatest added value in terms of quality, cost efficiency, social and environmental impact, and whether they bring opportunities for the supplier market. We therefore lead the way to higher quality, more efficient solutions that appreciate social and environmental benefits, improve cost-effectiveness and bring new business opportunities.

### 5.1. Future Directions

In terms of advancing innovative public procurement in the Republic of Moldova, we propose the following recommendations:

- ✓ Revise the Public Procurement Law, no. 131 of 03.07.2015;
- ✓ Initiate pilot tenders for selected categories of innovative products;
- ✓ Update instructions related to procurement processes;
- ✓ Conduct training sessions for suppliers on compliance with sustainability and certification criteria, incorporating best practices aligned with European Union directives;
- ✓ Establish a monitoring and evaluation system for contracts resulting from innovative public procurements;
- ✓ Develop a comprehensive manual on innovative public procurement;
- ✓ Enhance the Public Procurement Agency's website by incorporating an innovative public procurement section;

Formulate technical specifications for widely used ecological products.

Key Features of Innovation Partnerships:

**Long-term Collaboration:** Innovation partnerships emphasize sustained collaboration between the public sector and private entities, fostering ongoing co-creation and development of innovative solutions.

**Early Supplier Involvement:** Suppliers or industry partners are engaged early in the innovation process, collaborating with the public entity to define challenges, explore solutions, and jointly develop innovative products or services.

**Risk and Reward Sharing:** These partnerships involve mutual risk and reward sharing between the public sector and industry partners, incentivizing suppliers to invest in research and development with the assurance of mutual benefits from successful innovations.

**Flexibility in Procurement:** Innovation partnerships offer a more flexible procurement process, allowing negotiation and adjustments throughout the collaboration, reflecting the iterative nature of innovation.

**Transparent and Competitive Dialogue:** Transparent and competitive dialogue between the public sector and potential suppliers is emphasized, facilitating the exchange of ideas, expertise, and feedback to create a collaborative and innovative environment.

**Open Innovation Approach:** Encouraging the involvement of a diverse range of suppliers, including startups and small businesses, innovation partnerships tap into a broader pool of creative ideas and solutions.

**Focus on Unmet Needs and Challenges:** The public sector identifies specific challenges or unmet needs, inviting potential providers to propose solutions. This problem-based approach ensures that innovations address real-world problems.

Benefits of Innovation Partnerships:

**Drives Innovation:** Collaboration and early supplier involvement drive innovation, leading to the development of new solutions not possible through traditional procurement methods.

**Efficiency and Effectiveness:** Long-term partnerships allow for more efficient and effective development and implementation of innovative products or services.

**Reduced Time to Market:** Engaging suppliers early in the process and simplifying the procurement cycle can accelerate the time it takes for innovative solutions to reach the market.

**Risk Reduction:** Shared risks and rewards provide a balanced risk-sharing mechanism, alleviating uncertainties associated with innovation projects.

**Diversity in Supplier Participation:** Promoting diversity in supplier participation encourages contributions from both established companies and smaller, more nimble entities.

This innovative public procurement scheme aligns with the growing recognition that collaboration and flexibility are crucial for driving meaningful innovation in the public sector.

### 5.2. Limitations and Future Research Directions

The limitations of our research stem from the ongoing reformation process at the state level in Moldova. While our focus is on verifying the transposition of EU legislation on public procurement and adopting good practices (illustrated by the Copenhagen case), comprehensive data is currently unavailable. Nonetheless, this presents a challenge and an opportunity for future research in the field of innovative public procurement. Future endeavors will direct attention towards applied research, contributing to specialized scientific literature. In the digital age, where numerous sources abound, our objective is not only to achieve research milestones but also to explore further objectives in alignment with government policies on innovative public procurement.

In conclusion, the examination of the impact of globalization on innovative public procurement has revealed a complex landscape marked by both challenges and opportunities. The interconnectedness of economies and the rapid flow of information have undeniably expanded the horizons for innovative procurement practices, fostering cross-border collaborations and knowledge exchange. However, this globalization-driven evolution is not without hurdles, as cultural, legal, and regulatory disparities pose significant challenges for seamless integration.

The challenges highlighted in this manuscript underscore the necessity for policymakers and procurement professionals to adapt strategies that reconcile global dynamics with local contexts. This involves addressing legal and regulatory misalignments, fostering international standards, and leveraging technological advancements to streamline cross-border transactions. Moreover, cultivating a culture of innovation within public procurement agencies and nurturing a diverse and adaptable workforce are crucial components for successfully navigating the challenges posed by globalization.

On the flip side, the opportunities presented by globalization in the realm of public procurement are substantial. Collaborative initiatives, information-sharing platforms, and the potential for cost efficiencies through global sourcing can significantly enhance the innovative capacity of public procurement processes. Embracing these opportunities requires a proactive approach, fostering international partnerships, and promoting a mindset of continuous improvement.

In essence, the impact of globalization on innovative public procurement is a dynamic interplay between challenges and opportunities. Effectively harnessing the positive aspects while mitigating the negative implications demands a strategic and holistic approach. As we move forward, it is imperative for stakeholders to engage in ongoing dialogue, share best practices, and adapt strategies that align with the evolving global landscape, ultimately ensuring that public procurement remains a catalyst for innovation and sustainable development in an increasingly interconnected world.

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