Digital and Sustainable Public Procurement: Enhancing Governance and Competitiveness in Emerging Economies

***Elena Rusu**
Department of Finance and Banking, *Faculty of Economic Sciences,*
Moldova State University, *Republic of Moldova*
19elenarusu@gmail.com
gogolnicencoe@mail.ru

Acknowledgements. The author acknowledges the contribution of publicly available statistical and institutional information provided by the Public Procurement Agency of the Republic of Moldova, the European Commission and relevant international organisations, which served as the documentary basis for this research. The analysis, interpretations and conclusions presented in this paper are the sole responsibility of the author.

ABSTRACT

Digital transformation, sustainable development, and stronger governance are key factors in modern economic competitiveness. In this context, public procurement serves as a strategic tool through which public authorities can promote innovation, sustainability, and efficient use of financial resources. The aim of this study is to analyze the role of digitalization and sustainable public procurement in boosting the competitiveness of the Republic of Moldova. The research highlights the evolution of the MTender electronic public procurement system, the impact of sustainability principles on the procurement process, and the current challenges in implementing European standards. To carry out the study, the author applied traditional research methods: the monographic method, document analysis, comparison, trend analysis, etc. The conclusions arise as a result of the analysis of international documents, guidelines, and case studies, and reflect that AI in procurement aims to spend public funds on the purchase of products, services, and projects that promote sustainable development. The results show that integrating digital technologies and sustainability criteria can significantly help increase transparency, efficiency, and the competitiveness of the national economy.

Keywords: *Public Procurement, Digitalization, Sustainability, Governance, MTender*

JEL Classification: H57, O33, Q56, D73.

1. INTRODUCTION

Public procurement links public finance to the productive economy. Through purchasing decisions, governments shape demand for goods, works and services, influence the conditions under which firms compete, and can accelerate the diffusion of cleaner and more innovative technologies. Its importance is especially pronounced in emerging economies, where public expenditure is a major source of market demand and where institutional capacity, access to finance and market concentration may constrain private-sector development.

Digital procurement systems can reduce information asymmetries, standardise procedures, widen supplier access and create auditable data trails. Sustainable public procurement (SPP), in turn, broadens the award decision beyond the lowest initial price by incorporating environmental, social and economic considerations, including life-cycle costs (Enachi & Pîrvan, 2025). The strongest policy effects emerge when the two agendas are connected: digital systems make sustainability criteria measurable, traceable and monitorable, while sustainability objectives give procurement data a strategic purpose.

The Republic of Moldova provides a relevant case. Its procurement system has developed around the Law on Public Procurement No. 131/2015 and the MTender electronic platform, while the country has been aligning its institutions and legislation with the EU acquis (Republic of Moldova, 2015). The European Commission's 2025 report recognises progress in legal alignment and professionalisation, but also points to an outdated MTender system, limited administrative capacity and gaps in low-value procurement monitoring (European Commission, 2025). These challenges make Moldova a useful case for examining the gap between formal digitalisation and effective, sustainable procurement.

2. AIMS AND OBJECTIVES

To assess how digitalisation and sustainable public procurement can strengthen governance, market competition and economic competitiveness in the Republic of Moldova, and to identify policy lessons relevant to emerging economies, including Sri Lanka.

The specific objectives of the article are:

- To examine the evolution and structure of public procurement in the Republic of Moldova during 2020–2025.

- To assess the contribution of electronic procurement to transparency, accountability and administrative efficiency.
- To analyse competition indicators, including supplier participation, single-bid procedures and SME involvement.
- To identify opportunities for integrating environmental and social criteria and life-cycle costing into public procurement.
- To examine institutional, regulatory and technological barriers to digital and sustainable procurement.
- To formulate policy recommendations aimed at strengthening governance, competitiveness and sustainable public spending.

The paper addresses three research questions:

1. How did the reported scale and structure of public procurement evolve during the period for which comparable official data are available?
2. What governance and competitiveness constraints are associated with the current digital procurement architecture?
3. Which policy measures can connect e-procurement, sustainability and market openness in emerging economies?

1.3 LITERATURE REVIEW

The literature on public procurement increasingly treats purchasing as a policy instrument rather than a purely administrative transaction. Strategic procurement can support innovation, environmental protection, social inclusion and industrial development, provided that award criteria are transparent, proportionate and linked to the subject matter of the contract. The OECD recommends professional procurement institutions, data-driven performance management and the use of procurement to advance broader policy objectives.

The author used the following documentary sources: Law No. 131 of 3 July 2015 on Public Procurement of the Republic of Moldova; the European Commission's 2025 report on the Republic of Moldova; the EUSTAT methodological datasheet on growth rates; the National Procurement Commission of Sri Lanka's Procurement Guidelines (2024); the Public Procurement Agency's reports on public procurement and sectoral procurement activity for 2023, 2024, and 2025; and the National Programme for the Development of the Public Procurement System for 2023–2026 in the Republic of Moldova. Sustainable procurement requires a shift from

acquisition price to value over the useful life of a product or asset. Relevant criteria may include energy consumption, durability, repairability, recycled content, emissions, waste generation, accessibility, labour standards and local supplier development where legally permissible.

1.4 METHODS

The study analyses factual and theoretical material concerning innovation and sustainable development in the contemporary economy. It uses a literature review and synthesises its findings to develop the theoretical argument. The research also applies document analysis, the monographic method, and comparison. The informational basis consists of specialised literature, legislation, institutional reports, and relevant policy documents. The conclusions are drawn from the analysis of these documents, reports, and case studies.

5. RESULTS

The 2020–2025 period is therefore treated as the institutional observation window, while the main continuous value comparison is restricted to the verified 2021–2023 observations. The 2020 baseline is discussed using published procurement-to-GDP evidence, and 2024–2025 are analysed through verified institutional and EU-monitoring indicators. This conservative approach avoids fabricating missing values or treating differently defined indicators as directly comparable.

The following calculations are used (EUSTAT):

$$AGR_t = \left(\frac{V_t - V_{t-1}}{V_{t-1}}\right) \times 100\% \quad (1)$$

annual growth rate = [(value in year t / value in year t−1) − 1] × 100% (1);

$$PS_i = \frac{V_i}{V_T} \times 100 \quad (2)$$

procurement composition share = (value by procurement object / total reported value) × 100 (2).

All monetary values are nominal and have not been deflated. Accordingly, the results describe nominal market evolution rather than real-volume growth.

Table 1. Evolution of Reported Procurement Value

Indicator	Source / definition	Coverage
Procurement value, 2021–2023	PPA annual reporting; total value of procedures	MDL, nominal
Procurement composition, 2023	PPA annual report; goods, works and services	MDL and share of total
Procurement share of GDP, 2020	Published monitoring analysis based on official statistics	Percentage of GDP
Open tender indicators, 2024	European Commission Moldova Report 2025	Procedure/contract counts
2025 institutional developments	PPA annual report and EU accession reporting	Qualitative; not merged into value series

Source: Public Procurement Agency of the Republic of Moldova. Report on Public Procurement Activity 2021-2023.

Published monitoring evidence places public procurement at approximately 4.38% of GDP in 2020, compared with 4.25% in 2019. In 2021, public authorities purchased goods, works and services worth approximately MDL 8.445 billion. The PPA's annual report for 2022 records MDL 13.682 billion, while its 2023 report records MDL 12.358 billion.

Table 2. Reported Value of Public Procurement Procedures, 2020–2025

Year	Reported value (MDL bn)	Annual change
2020	Not directly harmonised in the value series	-
2021	8.45	-
2022	13.68	+62.01%
2023	12.36	−9.68%
2024	Not inserted into nominal series; EU reports market at 5% of GDP	-
2025	Official annual report published; series reconciliation required	-

Source: Public Procurement Agency of the Republic of Moldova.

The nominal value increased by MDL 5.237 billion between 2021 and 2022, equivalent to 62.01%. In 2023 it decreased by MDL 1.325 billion, or 9.68%, compared with 2022. The three-year pattern indicates substantial volatility. It should not be interpreted as a direct measure of efficiency: changes may reflect inflation, exceptional expenditure, project timing, changes in procedure coverage and the timing of contract reporting.

The 2023 value is reported by the PPA as MDL 12.358 billion across 6,499 procedures and 32,165 contracts and additional agreements. The average value per contract, as reported in the same annual report, was approximately MDL 975,150. The European Commission subsequently estimated the procurement market at 5% of GDP in 2024, maintaining the same share as in 2023 (European Commission, 2025) Differences between the PPA's annual value series and GDP-based estimates underline the need for a clear statistical perimeter, especially for low-value and sectoral procurement.

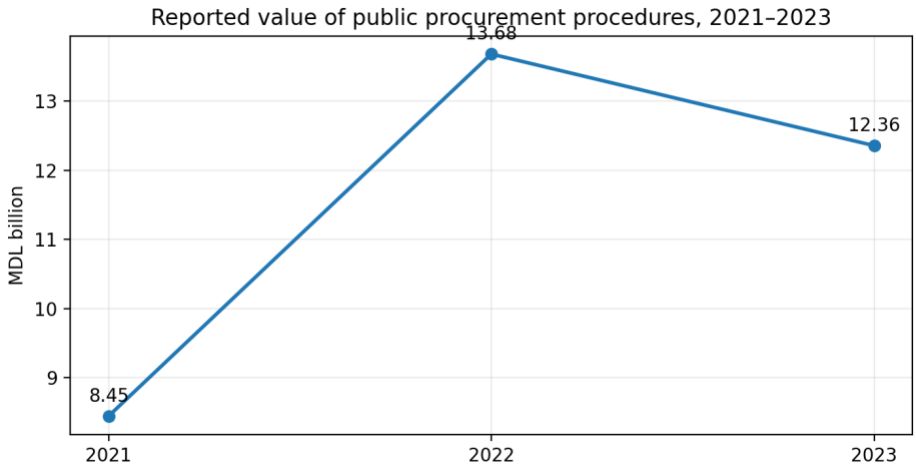

Figure 1. Reported Value of Public Procurement Procedures, 2021–2023 (MDL Billion)

Source: Public Procurement Agency of the Republic of Moldova. (2021-2023).

In 2023, the largest reported category was goods, accounting for MDL 5.559 billion or 44.99% of the total. Works represented MDL 4.515 billion (36.54%), while services amounted to MDL 2.283 billion (18.48%). The distribution suggests that procurement policy has considerable leverage over construction standards, energy performance, material efficiency and the environmental footprint of frequently purchased goods.

Table 3. Structure of Procurement by Object in 2023

Object	Value (MDL bn)	Share of total
Goods	5.56	44.99%
Works	4.52	36.54%
Services	2.28	18.48%
Total	**12.36**	**100.00%**

Source: Public Procurement Agency of the Republic of Moldova (2023).

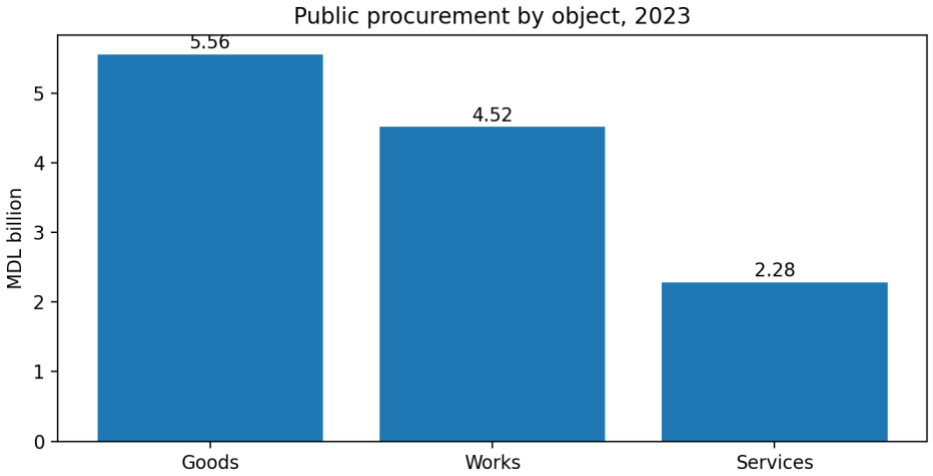

Figure 2. Composition of Reported Public Procurement Value by Object, 2023

Source: Public Procurement Agency of the Republic of Moldova (2023).

For goods, sustainable criteria can be applied to energy-efficient equipment, recycled materials, repairability, packaging and total cost of ownership. For works, the greatest potential lies in energy-efficient public buildings, low-carbon construction materials, climate resilience and whole-life infrastructure costs. For services, criteria can address energy use, accessibility, waste management, labour conditions and service quality.

The 2023 PPA report records 2,733 open-tender notices and 3,306 requests-for-quotations notices. For open tenders, the average number of offers was 4.23; 10.57% of procedures received no offer and 21.34% received only one offer. For requests for quotations, the average was 3.23 offers, while 11.72% of procedures received no offer and 22.34% received one offer. These indicators show that the existence of an electronic publication channel does not automatically ensure robust competition.

The European Commission's 2025 Moldova Report states that 3,432 open tenders in 2024 led to 26,535 contracts, representing 78% of all awarded contracts. It also reports that the procurement market accounted for 5% of GDP (European Commission. (2025). The Commission nevertheless identifies MTender as outdated and unable to support all tools provided by the legislation in force. It further notes the absence of an efficient mechanism to monitor the application and performance of new low-value procurement rules.

These findings point to a distinction between transparency of procedure initiation and transparency across the full procurement cycle. A modern system should publish structured data not only on notices and awards, but also on beneficial ownership, bid participation, contract amendments, delivery milestones, payment performance, sustainability commitments and actual outcomes. Without this information, digital procurement can improve administrative visibility while leaving contract execution and value-for-money assessment underdeveloped.

6. DISCUSSION

The evidence supports three main findings. First, procurement is economically significant but its statistical perimeter remains fragmented. Incomplete coverage of low-value purchases and differences between public and sectoral procurement complicate longitudinal comparisons. A reliable data architecture is therefore a prerequisite for evidence-based governance (OECD, 2022)

Second, competition indicators should be interpreted alongside supplier access and procedural design. A relatively high average number of offers can coexist with a substantial share of tenders receiving one or no offer. This may reflect market concentration, small contract sizes, complex qualification requirements, limited supplier capacity or low attractiveness of the contract. Digital platforms should therefore provide analytics that identify repeated single-bid patterns, concentration by supplier and contracting authority, and barriers faced by SMEs (OECD, 2022)

Third, sustainability requires operationalisation. The presence of a policy commitment is insufficient unless contracting authorities have standard criteria, lifecycle-cost methodologies, model tender clauses, market data and contract monitoring tools. The European Commission reported that Moldova's PPA held two online sustainable-procurement training sessions with 245 participants during the reporting period. This is a useful start, but sustained professionalisation requires systematic training and measurable implementation targets.

7. IMPLICATIONS AND LIMITATIONS

The implications for Sri Lanka are relevant but should be understood as policy transfer rather than a direct statistical comparison. Sri Lanka's Procurement Guidelines 2024, effective from 1 January 2025, include a dedicated chapter on sustainable public procurement. The guidelines define sustainability in economic, environmental, social and institutional terms and refer to lifecycle costing and green procurement principles. They also indicate that detailed SPP parameters are to be introduced through separate guidelines or manuals.

Moldova's experience reinforces the importance of translating high-level provisions into operational templates, digital data fields and performance indicators (Republic of Moldova. (2023).

Table 4. Policy Framework for Strengthening Digital and Sustainable Public Procurement: Reform Priorities and Expected Effects

Reform area	Recommended action	Governance / competitiveness effect
1. Digital infrastructure	Develop an interoperable, end-to-end e-procurement platform with open APIs, structured data and secure bid submission.	Reduces transaction costs; improves auditability and supplier access.
2. Complete market coverage	Integrate low-value and sectoral procurement data and publish a consistent statistical perimeter.	Improves market measurement and risk detection.
3. Sustainable criteria	Introduce standard green and social criteria by category, supported by lifecycle-cost tools and model clauses.	Rewards innovation, resource efficiency and quality.
4. Competition analytics	Monitor single-bid tenders, no-bid procedures, supplier concentration and SME participation.	Identifies barriers and strengthens competitive neutrality.
5. Contract management	Publish amendments, milestones, delivery performance, payment data and sustainability outcomes.	Connects award decisions to actual value for money.
6. Professionalisation	Establish competency standards, certification and continuous training for procurement officials.	Improves decision quality and implementation capacity.
7.Integrity and accountability	Use risk indicators, beneficial-ownership disclosure, audit trails and accessible complaint mechanisms.	Reduces corruption risks and increases public trust.

Source: Author's own elaboration based on OECD (2015,2022), European Commission (2025) and Sri Lanka's Procurement Guidelines (2024).

A phased implementation sequence is recommended. In the first 12 months, authorities should agree on a common data dictionary, identify reporting gaps and publish baseline indicators. In months 12–24, the digital platform should integrate contract-management information and pilot sustainability criteria in

high-impact categories such as construction, vehicles, ICT equipment and energy-consuming goods. In months 24–36, the system should introduce performance dashboards, independent evaluation and expansion of successful criteria across contracting authorities (National Procurement Commission of Sri Lanka, 2024)

A balanced performance dashboard should include: share of procurement value covered by open competition; average number of valid bids; share of procedures with one or no bid; SME participation; percentage of contracts using lifecycle-cost or environmental criteria; contract amendment rate; on-time delivery; payment delays; and verified environmental or social outcomes. Targets should be established only after a reliable baseline has been measured.

8. CONCLUSIONS

The case of the Republic of Moldova demonstrates that digitalisation and sustainable public procurement are mutually reinforcing but not interchangeable reforms. The reported value of procurement increased sharply in 2022 and contracted in 2023, while the structure of 2023 procurement shows substantial potential to influence goods, construction and service markets through sustainability criteria. European Commission evidence for 2024 confirms the economic significance of procurement and the central role of open tenders, but also highlights weaknesses in MTender, institutional capacity and low-value procurement monitoring.

The main contribution of the paper is an integrated governance framework linking digital transparency, competition, sustainability and professional capacity. Its central proposition is that procurement reform should move beyond electronic publication towards full-cycle, data-driven management. Sustainable criteria must be verifiable, linked to lifecycle value and supported by contract monitoring; digital systems must provide complete, interoperable information; and competition indicators must be used to identify barriers to market entry.

For Moldova, the priorities are to accelerate the development of a modern e-procurement platform, improve coverage and quality of procurement data, strengthen professionalisation and operationalise sustainable criteria. For Sri Lanka and other emerging economies, the case illustrates the importance of converting national procurement guidelines into practical implementation instruments, measurable targets and integrated digital monitoring. Future research should construct a harmonised 2020–2025 microdata panel, including low-value and sectoral procurement, and empirically test the relationship

between digital maturity, supplier competition, sustainability criteria and contract performance.

REFERENCES

Enachi, D., & Pîrvan, V. (2025). *Ghid de monitorizare a achizițiilor publice*. IDIS Viitorul / PACT. https://pulsachizitii.md/wp-content/uploads/2024/07/IDIS_PTF_Ghid-monitorizare-achizitii_2025.pdf

European Commission. (2025). *Republic of Moldova 2025 report* (Commission Staff Working Document SWD (2025) 758 final). https://www.europarl.europa.eu/RegData/etudes/ATAG/2026/789363/EPRS_ATA(2026)789363_EN.pdf

EUSTAT. *Methodological datasheet: Growth rate*. https://en.eustat.eus/document/datos/PI_metod/INDES-DEM01_i.html

National Procurement Commission of Sri Lanka. (2024). *Procurement guidelines—2024: Goods, works and non-consulting services* (Gazette Extraordinary No. 2412/01).

OECD. (2015). *Recommendation of the Council on Public Procurement* (OECD/LEGAL/0411). https://legalinstruments.oecd.org/en/instruments/OECD-LEGAL-0411

OECD. (2022). *Harnessing public procurement for the green transition: Good practices in OECD countries*. OECD Publishing.

Public Procurement Agency of the Republic of Moldova. (2023). *Report on public procurement activity for 2023*. Ministry of Finance. https://tender.gov.md/sites/default/files/document/attachments/raport_aap_2023.pdf

Public Procurement Agency of the Republic of Moldova. (2024). *Report on public procurement and sectoral procurement activity for 2024*. Ministry of Finance. https://tender.gov.md/ro/documents-terms/rapoarte-de-activitate

Public Procurement Agency of the Republic of Moldova. (2025). *Report on public procurement and sectoral procurement activity for 2025*. Ministry of Finance. https://tender.gov.md/ro/documents-terms/rapoarte-de-activitate

Republic of Moldova. (2015). Law No. 131 of 3 July 2015 on public procurement. *Official Gazette of the Republic of Moldova*. https://www.legis.md/

Republic of Moldova. (2023). *National programme for the development of the public procurement system for 2023–2026*. https://www.mf.gov.md/ro/content/programul-na%C8%9Bional-de-dezvoltare-sistemului-de-achizi%C8%9Bii-publice