

# Digital Procurement Transformation: Case Study in Central Java

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**Abstract**— This paper aims to examine the impact of digital procurement transformation in accelerating provincial economic growth. This research adopts a literature review and case study approach to procurement implementation in Central Java. This study recommends the implementing digital procurement transformation through 1) Digital Infrastructure Development, 2) Human Resource Capability Development, 3) SME Facilitation, 4) Development of Procurement Management Information Systems, 5) Development of Electronic Catalogs and Online Stores, 6) Monitoring and Evaluation, 7) Improved Governance and Budget allocation. This is a research niche, and it is expected to provide opportunities for future research.

**Keywords**— Technology, transformation, digitalization, procurement, economy, literature review.

## I. INTRODUCTION

Public procurement has been transformed into the digital era and the era of society 5.0. The need for digital procurement transformation has become a main priority. Presidential regulation of the Republic of Indonesia number 17, 2023 regulates the acceleration of digital transformation to increase the use of domestic products, and Small and Medium-size Enterprises (SME) in procurement of government goods/services (Perpres RI, 2023). The opportunity to digitize the electronic procurement system and its supporting systems is a pathway to system maturity (Seyedghorban et al., 2020).

Digital transformation has moved forward at a rapid and dynamic pace, changing the paradigm of the global economy and society. digital transformation makes a big momentum in Indonesia in realizing the Golden Indonesia 2045, helping to realize social challenges (Virgiawan Ramadhan, 2024; Wesseling & Edquist, 2018). The values of Indonesia's digital industry has grown significantly from 41 billion dollars in 2019 to 77 billion dollars in 2022 and is expected to increase to 130 billion dollars by 2025 (Ministry of Finance, 2023). In Central

Java, General Procurement Plan (RUP) commitments through e-purchasing shows significant growth from IDR 1,485,039,967,001 in 2022 to IDR 2,257,669,213,636 in 2023 and increased to IDR 2,433,331,342,800 in 2024 (APBJ, 2021).

Digital transformation in public procurement will have an impact on increased efficiency and transparency, further perspective, sportif competition, growth of innovation and collaboration, as well as the realization of economic recovery and growth of domestic industries.

The Provincial Government together with related stakeholders continue to encourage the strengthening of the regional economic foundation by setting the SMEs digital transformation agenda as one of the priorities. By using digital technology optimally, SMEs can obtain several benefits, including having a wider and larger consumer base, increasing revenue, reducing costs and facilitating monitoring of business activities (Chan et al., 2019; Liu & Yang, 2019).

Economic growth has become one of the benchmarks of government success in implementing development programs. It is regard, the dynamic ability to

plan and support programs with the concept of people’s economy, which makes SMEs the main basis in realizing an inclusive and sustainable economy, is a major challenge (Teece et al., 2016).

Public procurement has an important role in the implementation of regional development to improve public services and the development of the national and regional economy. For this reason, it needs to be regulated in its implementation in accordance with the vision of the Public Procurement Policy Agency, which is to become a credible reformer to realize procurement that produce value for money to improve public welfare and regional competitiveness.

Digital procurement transformation has become a key in spurring economic growth in many regions (Alabdali & Salam, 2022). By utilizing the adoption of digital technology, the procurement process becomes more efficient, effective, transparent, accountable, and supports the growth of business sector (Luo et al., 2023). This article will discuss how digital procurement transformation would accelerate the economic growth of Central Java Province.

**II. RESEARCH METHOD**

This research uses a literature review and descriptive approach. Descriptive analysis method according to Sugiyono (2016:15) is to analyze, expose, summarize various conditions, situations from various data regarding the problem under study or observed. Research based on literature review or secondary data research to understand the digital procurement transformation encourages acceleration of economic growth in Central Java Province.

**III. RESULTS AND DISCUSSION**

1. Analysis of the implementation of digital procurement transformation in Central Java Province.

1.1. Human resources management of procurement information systems.

Based on article 74 of Presidential Regulation number 12 of 2021 concerning Amendments to Presidential Regulation number 12 of 2018 concerning Procurement of Government Goods/Services, that the function of Goods/Services Procurement within Ministry/Institution/Local Government is carried out by the Function Management Resources of Procurement. Ministry/Institution/Local Government are required to have a Procurement Personnel, compile and manage an Action Plan for fulfillment of Goods/Services Procurement Personnel in accordance with the Regulation of Head of the Government Procurement Policy Agency of the Republic of Indonesia number 6 of 2021 concerning Guidelines for the Compilation and Management of Action Plans for Fulfillment of Goods/Services Procurement Personnel (LKPP RI, 2021). In the literature, procurement effectiveness is closely related to the competence of human resources involved in the procurement process (Jaffu & Changalima, 2023; Kiage, 2013).

In the management of the goods/services procurement information system under the coordination of one personnel as Head Division of Procurement Information System Management, two personnels of specialty functional and seven personnels of general staff. The Goods/Services Procurement Administration Bureau of the Regional Secretariat of Central Java Province is led by one personnel as Head of the Goods/Services Procurement Administration Bureau, two personnels as Head of Divisions, 4 personnels as Head of Sub-Divisions, 48 personnels as Technical Functional (JFT) and 25 personnels as General Functional (JFU), as shown in the attached table.

Table 1. Human resources for goods/services procurement management in 2024

	Echelon II	Echelon III	Echelon IV	JFT	JFU	Total
Head of Bureau	1	0	0	0	0	1
Division of Procurement	0	1	3	40	12	56
Division of Procurement Information System	0	1	0	2	7	10
Division of Development and Advocacy	0	0	1	6	6	13
<b>Total</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>48</b>	<b>25</b>	<b>80</b>

Source: Central Java Employee System (Employee Bureau)

1.2. Transaction value

The value of goods/services procurement transactions in Central Java Province showed a positive trend during fiscal year 2022-2024 period. The General Procurement

Plan Commitment (RUP) for e-purchasing amounted to Rp1,485,039,967,001 in 2022, increased to Rp2,257,669,213,636 in 2023, and amounted to Rp2,433,331,342,800 in 2024. Meanwhile, the Transaction

Value (Catalog and Local Catalog, which is famous for Blangkon Jateng) amounted to Rp1,043,047,094,707 in 2022, increased to Rp1,979,695,825,906 in 2023, and has reached Rp1,599,870,113,351 as of April 30, 2024. The percentage of completed transaction status continues to show a significant increase from 43.56% in 2022, rising to 77.57% in 2023. Details are shown in the attached table.

This means that the digital procurement transformation has driven an increase in the value of transactions, the percentage of transaction value and the completion status of complete transactions (Zhao et al., 2022).

Table 2. Central Java e-Purchasing Value in 2022-2024

	2022	2023	2024 (April)
RUP Commitment e-Purchasing	1.485.039.967.001	2.257.669.213.636	2.433.331.342.800
Transaction value (eCatalog+Blangkon)	1.043.047.094.707	1.979.695.825.906	1.599.870.113.351
Transaction status is complete	646.904.405.944	1.751.206.841.061	192.314.844.193
% transaction value	70,24%	87,69%	65,75%
% complete status	43,56%	77,57%	7,90%

Source: Central Java, Procurement Management Information System

1.3. Number of packages, e-catalog providers and marketplace.

The number of goods/services procurement packages, e-catalog and Marketplace providers in Central Java Province continues to show an increase during the 2022-2024 period. The total number of e-Catalog packages was 3,934 packages in 2022, increased to 7,512 packages in 2023, and until April 2024 a total of 3,481. The number of SME providers from 1,247 providers in 2023, increased to 1,684 providers in 2024 (April). Marketplaces that

cooperate with the Central Java Provincial Government through the Blangkon Program Technical Agreement increased from 1 marketplace in 2022, to 4 marketplaces in 2023, and 5 marketplaces in 2024. Details are shown in the attached table.

This shows that ease, speed, accessibility through digital procurement transformation increases the involvement of SME in goods/services procurement (Priyono et al., 2020; Ulas, 2019) and business process performance in economic turnover (Bag et al., 2020).

Table 3. Central Java e-Catalog Provider and Marketplace Year 2022-2024

	2022	2023	2024 (April)
Total e-Catalog Package	3.934	7.512	3.481
E-Catalog Provider:			
- Micro Business	N/A	300	412
- Small Business	N/A	637	888
- Medium Business	N/A	84	115
- Non-SME	N/A	226	269
Number of Marketplaces	1	4	5

Source: Central Java, Procurement Management Information System.

1.4. Use of digital platforms

Since 2021, the Central Java Province has launched Blangkon Jateng Program, which is famous for Central Java Online Shopping. Blangkon Jateng is an internalization of changes in work culture towards digitalization of goods/services procurement, with the aim of providing convenience and business expansion to small, micro and enterprise business in the government procurement market, encouraging SMEs to Go Digital, making procurement more inclusive, increasing the use of domestic products,

utilizing marketplaces in procurement, and last but not least increasing transparency and accountability of procurement.

In conjunction with the needs and developments, the Public Procurement Policy Agency on March 28, 2024, launched the e-Catalog Version 6, which is built to improve the performance of e-Purchasing System by cooperating with Telecommunication Indonesia (Telkom). The advantages of these features are the ease of finding products, making payments, and monitoring the ongoing transaction process. Users will be able to quickly find the

information they need, thus speeding up the procurement process. The Central Java Province is one of the Ministry/Local Government appointed as a pilot project.

This shows that electronic procurement service in Central Java Province is running appropriately, and it is piloting for further exercise in the development of electronic procurement systems.

#### 1.5. Help desk's electronic procurement services (LPSE)

In an effort to implement LPSE management, optimization of roles and responsibilities in the implementation of service management has been carried out, which aims to: 1) ensure that each LPSE person takes the role of carrying out their duties and responsibilities properly, 2) synergize processes in all LPSE areas in order to realize good, effective and efficient IT Services Management, 3) facilitate monitoring and evaluation as material for improvement, 4) support and realize the integrity of reliable LPSE, 5) provide improvements and implementation of ITSM in accordance with service standardization (Deputi II LKPP, 2022).

Based on above analysis of the implementation of digital procurement transformation of goods/services in Central Java Province, the challenges in the digital procurement transformation include:

- Integration and Migration: integration is closely related to Application Programming Interface (API) services, which is a set of rules, protocols, and tools that allow various software and applications to interact and communicate with each other. Integration of National Procurement Plan Information System (SIRUP) with Regional Government Information System, Ministry of Home Affairs (SIPD), Local SIRUP with National SIRUP, SIPD with e-planning and e-budgeting are becoming challenges. Database migration, application migration, and server migration from LKPP to Telkom servers that require system adjustments, error/bugs, system downs and other technical problems require coordination and collaboration among stakeholders across Ministry/Institutions/Local Governments.
- Data security and privacy: as the procurement process becomes increasingly digitized, concerns about network security, and data privacy become priority and important issues.
- Improve LPSE governance in the digitalization of goods/services procurement.
- Change management: the shift to digital requires changes in work culture and organizational processes, which are resistant to change.
- Human Resource Capacity: strengthening the capacity, skills and knowledge of electronic procurement service managers periodically as needed and continuously.

2. Analysis of the impact of digital transformation of public procurement on economic growth in Central Java Province.

#### 2.1. Improve efficiency and effectiveness

Digital transformation encourages faster and cheaper procurement processes, saving time and cost for government and business. This is shown in the percentage of e-purchasing transaction value until April 2024 has reached 65.75%. digitalization of procurement processes and by-system transaction minimize the risk of budget misuse and prevent corruption. Furthermore, increased access for business actors, especially SMEs to participate in procurement of government goods/services, as indicated by e-catalog provider from 1,247 providers in 2023 to 1,684 providers in April 2024 (APBJ, 2021).

#### 2.2. Increased transparency and accountability

All information related to the procurement process is available online through the electronic procurement system (SPSE) and can be widely accessed by the public. The procurement process is well-documented and can be audited by both internal (inspectorate) and external parties (Government Audit Board or Law Enforcement Officials). Furthermore, the digital transformation of public procurement has increased public trust in government and the procurement process.

#### 2.3. Increasing competitiveness and innovation

The digitalization procurement transformation has made it easier for business to obtain information and participate in tenders. In addition, it opens opportunities for new business actors to participate in the procurement of goods/services. As well as encouraging innovation in product and service development, especially for Small, Micro and cooperative Enterprises (Bag et al., 2020; Harju et al., 2023; Zhao et al., 2022).

#### 2.4. Achievement of regional key performance indicators by 2024

Digital procurement transformation has contributed to the achievement or fulfillment of the regional target of the main performance indicators (IKUPD) of the Procurement Bureau, Central Java Province. With the target of increasing the effectiveness and accountability of local government administration, and target indicators: effectiveness of procurement services. From 90% target in 2023 IKUPD Bureau APBJ, a realization of 92.5% has been achieved, this is obtained from the average value of tenders (212 packages=100%), e-purchasing (9,933 packages=100%), and recording (17,385 packages=77.58%) (APBJ, 2021).

#### 2.5. Appreciation and awards

An awards and appreciation for innovation in e-procurement services and procurement management information system, the Government of Central Java Province has received the Bronze Champion Innovation for

SMEs Empowerment – Direct Shopping for Central Java Online Stores (Blangkon Jateng)” Award. This shows that the digital procurement transformation realizes maturity (Seyedghorban et al., 2020).

2.6. Collaboration and integration drive economic growth

Blangkon Program in Central Java has a memorandum of understanding with five marketplaces. They are: 1) GratisOngkir, which is homebased in Klaten, 2) Toko Gramedia in Ungaran, Semarang Regency, 3) Tiga Serangkai in Surakarta Municipality, 4) Indotrading with headquarter in Jakarta, and 5) Toko Ladang in Surabaya, East Java. This shows that digital procurement transformation indirectly accelerates economic growth (Dwi Aprilia et al., 2021; Virgiawan Ramadhan, 2024), collaboration provides both opportunities and challenges for sustainability (Aksin-Sivrikaya & Bhattacharya, 2017).

3. Analysis of factors affecting the successful implementation of digital procurement transformation in Central Java Province.

3.1. System capability in supporting data analysis

The APBJ Bureau, Central Java Province since 2022 has developed Procurement Monitoring Information System (known as SIMONBAJA) and Procurement Report Information System (known as SILALAPBAJA), which is integrated with the National SIRUP and LKPP. This is so important in delivering data analysis, which is submitted regularly for policy making. Procurement digitization

increases information processing capacity, data analysis and reduces uncertainty, improve efficiency and effectiveness of procurement processes (Hallikas et al., 2021; Harju et al., 2023).

3.2. Internet infrastructure availability

The APBJ Bureau, Central Java in-term managing e-procurement services has prepared a stable and high-speed internet network. Technically, it has capability to provide dedicated 100Mbps connection services, fiber optic network with service level guarantees up to 99%, symmetric 1:1 Quality of Services (QoS), and availability to provide Multi Router Traffic Graper quarterly. The literature shows that information communication technology (ITC) infrastructure has an important role as one of the success factors in procurement’s adoption (Afolabi et al., 2019; Chiang et al., 2021).

3.3. Human resource capacity of LPSE personnel.

The availability of human resources has a very important role in successful and sustainability management of procurement information systems. The Division of Procurements Information System Management has 10 personnels, which is consist of: 5 personnels with Diploma Degree, 4 personnels with bachelor’s degree, and 1 personnel with Doctorated Degree, thus further strengthening the capacity and capability in managing the Procurement Management Information System (LKPP RI, 2021).

Table 4. Human resources for procurement information system 2024

	Doctoral	Master	Bachelor	Diploma	Total
Division of Procurement Information System	1	0	4	5	10
<b>Total</b>	<b>1</b>	<b>0</b>	<b>4</b>	<b>5</b>	<b>10</b>

Source: Central Java Employee System (Employee Bureau)

3.4. Socialization and education for business actors.

Stakeholders’ collaboration among government, private sector, academia, and the media encourage economic growth in Central Java. Various activities such as Marketplace Socialization and Business Matching brings together between SMEs, policy maker and procurement workers, those encourage participation and purchase (Hoekman & Taş, 2022).

3.5. Standard operating procedures (SOP)

The implementation of standardization refers to 17 LPSE standards year 2017 is one of the factors that encourage the successful implementation of the digital procurement transformation. Standardization is update or adjusted based on changes and regulations set by the Indonesian Government for Procurement Policy Agency (Deputi II LKPP, 2022).

3.6. Data security and privacy.

Data security and data privacy cannot be separated from the support and guarantee of the information technology technical team under LKPP and Central Java Provincial Communication and Information Officer as Provincial Data Center’s Manager. The centralized e-procurement system application is updated and changelog by LKPP Central Information Technology Team and is currently managed by Telecommunication Indonesia. In addition, to ensure data security, it is backed up by Electronic Certification center (BSrE) which is a technical unit at the Cyber and Crypto Agency (BSSN). Empirical research shows that private security, public procurement security has become an important issue and concern in various parts of the World (Ruohonen, 2020).

3.7. Budgeting

The successful implementation of digitalization procurement transformation cannot be separated from the budget element in carrying out the main tasks and functions

of managing procurement information system. Budget allocation according to program needs adjusts to priorities and financial bases.

This is also inseparable from the support of leadership in determining policy directions, strategies and priorities in the management of public procurement information systems. Initiation of budgeting process and being one of the success factors of the impact of digital implementation (Derbeneva & Starodubets, 2021; Muminov & Zakhirova, n.d.).

### 3.8. Monitoring evaluation and helpdesk

Monitoring evaluation and helpdesk for e-procurement services management are carried out every working day according to a schedule and teamwork with designated personnel. In addition, a person in charge (PIC) has been established as a contact person for each working group and intersectoral among organization in Central Java Province.

## IV. CONCLUSION

Based on the research results, it can be concluded that the implementation of digital procurement implementation has had a positive impact on economic maturity and growth (Seyedghorban et al., 2020).

Digital procurement transformation plays an important role in accelerating economic growth in Central Java Province. By utilizing digital technology, efficiency, transparency, and inclusion of SME's growth. Steps towards successful digital transformation need to be implemented comprehensively to ensure maximum benefits from the adoption of procurement's digital technology (Luo et al., 2023; Nandankar & Sachan, 2020).

To encourage accelerated economic growth in Central Java Province, recommendations for digital procurement transformation policies can be conveyed as follows:

- 1) Digital infrastructure development: can improve digital infrastructure, such as expanding the reach of internet penetration, improving the quality of digital infrastructure, and facilitating access for business, especially SMEs.
- 2) Human resources capacity development; increasing the capacity and knowledge of human resources on regulations, training, best practices, helpdesk in the management of procurement services (LPSE), as well as building a digital culture within Provincial officer and Business Actors.
- 3) Facilitation of SMEs: strengthening the facilitation of SMEs with marketplaces through activities such as Business-Matching, Joint Workshop with Government and Business Actors, technical guidance, socialization and education on update to e-procurement system and management of procurement information system.
- 4) Development of procurement information system: integrated with LKPP system, to utilize data and technology to improve efficiency and transparency in public procurement, as well as the development of data analytics as the backbone of decision making.
- 5) Development of e-catalog and online store: as needed and collaborating through technical agreements with marketplace incorporated in the Blangkon Program and upgrading the Provider Performance Information System (SIKAP) to a Vendor Management System (VMS) to manage products and contracts.
- 6) Monitoring and evaluation: periodically monitoring and evaluation towards the performance of digital procurement transformation, and adjusting policies and strategies based on the results of monitoring and evaluation.
- 7) Improved governance and budget allocation for the management of procurement information system to realize quality service, availability of adequate capacity, privacy and information security are maintained.

## AUTHORS CONTRIBUTION

All authors contributed toward preparing data, methodology, analysis, drafting and revising the paper, and agree to be accountable for all aspects of the work.

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