

Analysis of the Implementation of the E-Purchasing System on the Efficiency, Transparency, and Accountability of Goods and Services Procurement in East Kutai Regency

Bayu Prasetya¹, Tukimun² and Eswan³

Department of Economic, Faculty of Economics, University of 17 Agustus 1945 Samarinda, Jl. Ir. H. Juanda No. 80, Samarinda, East Kalimantan, 75123, Indonesia^{1,2,3}

Email: cjdwbayu9@mail.com¹, moonix.mgt@gmail.com², eswanstmt@gmail.com³

* Correspondence: cjdwbayu9@mail.com

Citations: Prasetya, Bayu., Tukimun, Tukimun., Eswan, Eswan., (2025). Analysis of the Implementation of the E-Purchasing System on the Efficiency, Transparency, and Accountability of Goods and Services Procurement in East Kutai Regency. *World Journal of Business Research and Project Management*, 05(02), 16-24.

Academic Editor:

Received: 16 July 2025

Accepted: 4 August 2025

Published: 30 August 2025

Abstract: This study analyzes the implementation of electronic procurement (e-purchasing) in the procurement of goods and services in East Kutai Regency. A descriptive and comparative approach was employed. The research data comprises two main components. First, primary data were obtained through a closed-ended questionnaire using a Likert scale, distributed to fifty respondents, including procurement officials, operational staff, and suppliers of goods and services. The questionnaire aimed to measure respondents' perceptions of procurement efficiency, transparency, and accountability. Second, secondary data were collected from official documents and procurement reports before and after the system's implementation (2023–2025). Secondary data were analyzed using percentage statistics to compare process time indicators, procurement costs, and levels of transparency before and after the adoption of the e-purchasing system. The findings reveal that the implementation of electronic procurement significantly accelerated the procurement process, reduced both time and costs, and enhanced transparency and accountability in goods and services procurement management. Based on these results, the study recommends strengthening human resource training and technological infrastructure to optimize the future use of the e-purchasing system.

Keywords: East Kutai Regency; E-Purchasing System; Procurement Accountability; Procurement Efficiency; Procurement Transparency



Copyright: © 2022 by the author. Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

1. Introduction

In public governance, the procurement of goods and services plays a crucial role as it directly impacts the quality of public service delivery. This sector has frequently come under scrutiny in Indonesia due to its vulnerability to corruption and inefficiency (KPK, 2023). To address these issues and enhance transparency, accountability, and efficiency in procurement processes, the Indonesian government, through the National Public Procurement Agency (Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah – LKPP), has implemented an electronic procurement system (e-purchasing) through the electronic catalog (e-Catalogue) and the Electronic Procurement System (SPSE). This policy is regulated under LKPP Regulation No. 6 of 2016 on the Electronic Catalogue, subsequently updated by LKPP Regulation No. 11 of 2018 and LKPP Regulation No. 9 of 2021 (LKPP, 2021). These regulations also promote the empowerment and utilization of domestic products through the electronic procurement mechanism.

The integration of the e-purchasing system with government financial management systems such as SAKTI and SIPD is expected to enhance monitoring, time efficiency, and transaction accuracy, particularly with the launch of e-Catalogue 6.0 in 2024 (LKPP, 2024). International studies, such as that by Fazekas and

Blum (2021), indicate that the adoption of e-procurement in Indonesia and several other countries has accelerated public procurement processes and reduced the potential for corrupt practices. Nevertheless, implementation at the regional government level continues to face various challenges, primarily related to limited human resources and information technology infrastructure, especially in areas with inadequate internet access (Bappenas, 2022). The success of e-purchasing implementation is highly dependent on continuous support and training for stakeholders, including institutional leadership (UNDP, 2021).

Previous studies support the finding that the use of electronic procurement systems can enhance transparency, efficiency, and accountability. For example, Saputra et al. (2019) found that the system accelerated procurement processes and reduced the time required for medicine procurement at Grhasia Mental Hospital in Yogyakarta, although challenges remained regarding the availability of skilled human resources and technological expertise. Another study by Rahmawati and Priambodo (2025) in the Regional Secretariat of Kediri Regency concluded that the e-catalogue improved transparency by providing open access to product, price, and supplier information. However, challenges persisted, particularly in the technical understanding of procurement officials and commitment-making officers (PPK), which needs to be addressed through targeted training. Meanwhile, Nahuway and Tamaela (2020) in Maluku Province found that perceptions of transparency and accountability significantly influenced user satisfaction with the system. Rakhman (2024) also asserted that digitalization in procurement could increase productivity by up to 40 percent and strengthen accountability.

Based on the above background and previous research findings, this study aims to examine the effectiveness, clarity, and accountability of the electronic procurement system in the procurement of goods and services in East Kutai Regency. The research focuses on the extent to which the system improves the quality of procurement governance within the local government environment.

2. Materials and Methods

This study employed a quantitative methodology using a descriptive and comparative approach. According to Sugiyono (2018), the data utilized in this research consisted of both primary and secondary sources. Secondary data were obtained from official documents and reports related to the procurement of goods and services in East Kutai Regency, covering the period before and after the implementation of the e-purchasing system (2023 to 2025). Primary data were collected through questionnaires distributed to employees and procurement officials within relevant institutions. East Kutai Regency was selected as the study area because it actively utilizes an electronic procurement system for the acquisition of goods and services within the government sector, with both primary and secondary data collected from 2024 to 2025.

The study population included all individuals involved in the procurement process in East Kutai Regency. Fifty respondents were surveyed, consisting of procurement officials, operational staff, and suppliers who actively use the electronic procurement system. The questionnaire was designed to measure three main factors: efficiency, transparency, and accountability. In addition, secondary information was gathered from the official electronic procurement system of East Kutai Regency. This included documents detailing procurement processing times, costs, and transparency reports. To evaluate the secondary data, indicators such as procurement processing time, cost, and transparency levels were compared before and after the implementation of the e-purchasing system. The study focused on three core components of the procurement process: efficiency, transparency, and accountability. Efficiency was measured by comparing the average time required to complete procurement processes before and after the implementation of the electronic system, as well as calculating the cost savings achieved. Transparency was assessed through survey items evaluating the openness of the tender process, accessibility of procurement information, and the announcement of winning bidders. Meanwhile, accountability was evaluated based on respondents' perceptions of the ease of tracking budget expenditures, the accuracy of budget utilization, and the auditability of procurement activities—supported by the electronic transaction records within the e-purchasing system.

3. Results

3.1. Number of Procurement Transactions Through e-Purchasing in East Kutai Regency

The number of transactions conducted is a key indicator of the utilization of the electronic procurement system by Regional Government Organizations (Organisasi Perangkat Daerah – OPD) in East Kutai Regency. A higher number of transactions reflects the level of system adoption and users' trust in the e-purchasing process for procuring goods and services. Procurement conducted through e-purchasing is expected to be more efficient, transparent, and accountable, thereby supporting improved management of goods and services procurement.

Table 1. e-Purchasing Procurement Statistics of Kutai Timur Regency

Year	Number of Transactions	Total Procurement Value (IDR)
2022	1.423	Rp 132.400.000.000
2023	1.789	Rp 151.800.000.000

Table 1. The table above shows an increase of 366 transactions, or approximately 25.7%, from 2022 to 2023, along with a rise in the total procurement value of IDR 19.4 billion, or around 14.6%. This increase indicates that the Regional Government Organizations (OPDs) in East Kutai Regency are increasingly utilizing the electronic procurement system. The associated benefits such as time efficiency, process transparency, and accountability in budget utilization continue to improve. Overall, this positive trend can serve as a key indicator of the successful implementation of electronic procurement in the region. Moreover, it may serve as a foundation for the continued development of e-procurement practices to support better procurement governance.

Table 2. Comparison of Procurement Realization Across Government Agencies (2023)

Government Agency (OPD)	Number of Transactions	Total Procurement Value (IDR)	Average Processing Time (Days)
Health Office	438	Rp 38.750.000.000	8
Education Office	367	Rp 35.900.000.000	9
Public Works Office	292	Rp 41.200.000.000	10
Regional Secretariat	240	Rp 18.500.000.000	7
Agriculture Office	192	Rp 17.450.000.000	11

Table 2. The highest number of transactions was recorded by the Health Department, with 438 transactions and a total procurement value of IDR 38.75 billion, and an average processing time of 8 days. The Education Department recorded 367 transactions with a total procurement value of IDR 35.9 billion and an average processing time of 9 days. The highest total procurement value was recorded by the Public Works Department, with 292 transactions and an average processing time of 10 days. Meanwhile, the Regional Secretariat recorded 240 transactions with a total procurement value of IDR 41.2 billion.

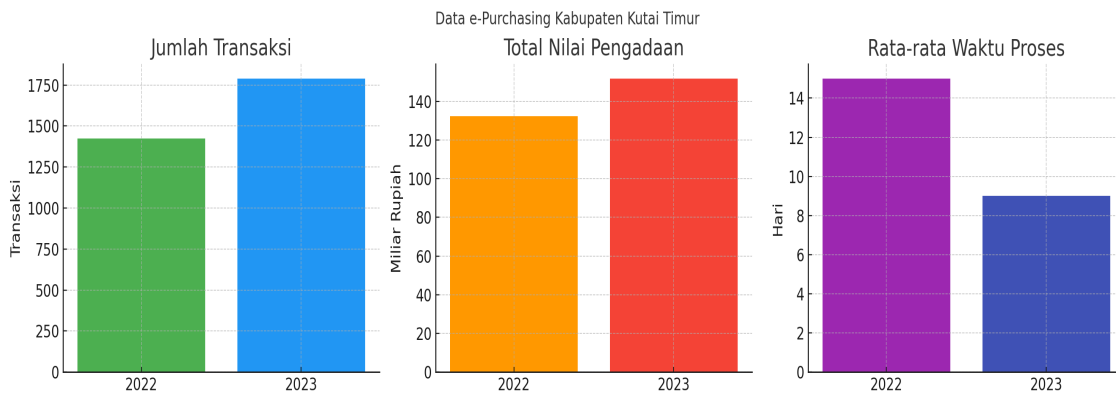


Diagram 1. E-Purchasing Data of East Kutai Regency for 2022–2023

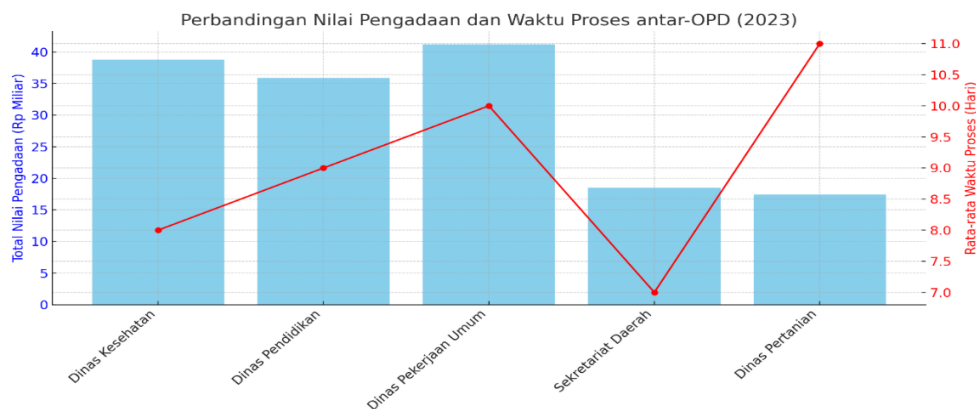


Diagram 2. Comparison of Procurement Realization Across Government Agencies (2023)

Diagram 1 and Diagram 2. These diagrams present a visualization of e-purchasing data in East Kutai Regency from 2022 to 2023. The data illustrate the number of transactions, total procurement value, and a comparison of procurement value and average processing time across Regional Government Organizations (OPDs) in 2023. The variation in procurement performance among OPDs can serve as a basis for evaluating and improving the management of the e-purchasing system within each organization.

3.2 Procurement Efficiency Through the E-Purchasing System

The effectiveness of goods and services procurement significantly influences the success of the electronic procurement system. The use of information technology is expected to accelerate procurement processes, conserve resources, and deliver more accurate outcomes. The primary objective of implementing the e-purchasing system in East Kutai Regency is to reduce the amount of time and cost associated with procurement activities. This, in turn, aims to enhance government performance and promote more efficient utilization of the public budget.

Table 3. Average Procurement Processing Time Before and After the Implementation of the E-Purchasing System in East Kutai Regency (2024–2025)

Year	Average Procurement Time (Days)	Time Reduction (%)
Before E-Purchasing (2023)	45	-
After E-Purchasing (2024–2025)	30	33%

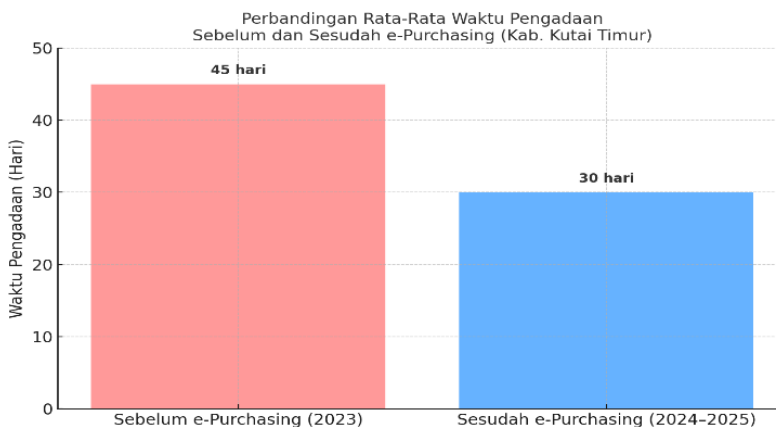


Diagram 3. Comparison of Procurement Time Before and After E-Purchasing

Table 3 and Diagram 3. The results indicate that the use of the electronic procurement system in East Kutai Regency has significantly improved the efficiency of goods and services procurement processes. The average time required to complete a procurement process was previously 45 days; however, after the implementation of the system in 2024–2025, this average was reduced to 30 days—a 33% decrease. This demonstrates that the electronic procurement system has effectively enhanced the efficiency of procurement operations in the region.

3.3. Transparency in the Procurement Process Through the E-Purchasing System

Transparency is a critical component of the goods and services procurement process, as it contributes to increased public trust in the government. The electronic procurement system facilitates open and real-time access to information, enabling various stakeholders including procurement officials, suppliers, and the general public to monitor each stage of the procurement process. Enhanced transparency fosters healthy business competition and reduces the risk of corruption and data manipulation.

Table 4. Procurement Process Transparency Based on Respondent Assessment (2024–2025)

Procurement Aspect	Procurement Officials (%)	Goods/Services Providers (%)	Public (%)
Access to Procurement Information	85%	80%	75%
Openness of Tender Process	90%	85%	80%
Tender Winner Announcement	88%	82%	77%

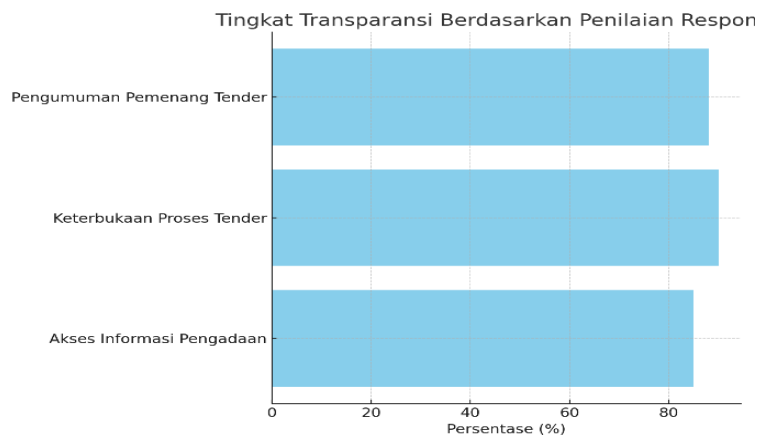


Diagram 4. Transparency Level Based on Respondent Assessment

Table 4 and Diagram 4. Findings based on respondent assessments during the 2024–2025 period indicate that the procurement process in East Kutai Regency is highly transparent. According to the data, 90% of procurement officials, 80% of goods and services providers, and 75% of the general public rated the announcement of tender winners as very transparent. Additionally, 85% of procurement officials, 85% of providers, and 80% of the public considered access to procurement information to be sufficiently open. These results demonstrate that the implementation of the e-purchasing system in East Kutai Regency has significantly enhanced transparency in goods and services procurement. The system allows various stakeholders to access data openly and in real time, facilitating effective monitoring of procurement processes. Increased transparency can lead to healthier and more accountable competition while reducing uncertainty and the risk of unethical practices.

3.4. Accountability in Procurement Budget Management Within the E-Purchasing System

The success of good governance practices largely depends on the accountability of budget management in the procurement of goods and services. By enabling real-time and electronic transaction recording, the e-procurement system contributes significantly to improving accountability. It allows the entire procurement process to be monitored and audited with greater clarity and accuracy.

Table 5. Budget Management Accountability Based on Respondent Assessment (2024–2025)

Budget Management Aspect	Procurement Officials (%)	Goods/Services Providers (%)	Public (%)
Budget Expenditure Monitoring	87%	83%	80%
Accuracy of Budget Utilization	85%	81%	78%
Ease of Budget Auditing	90%	86%	82%

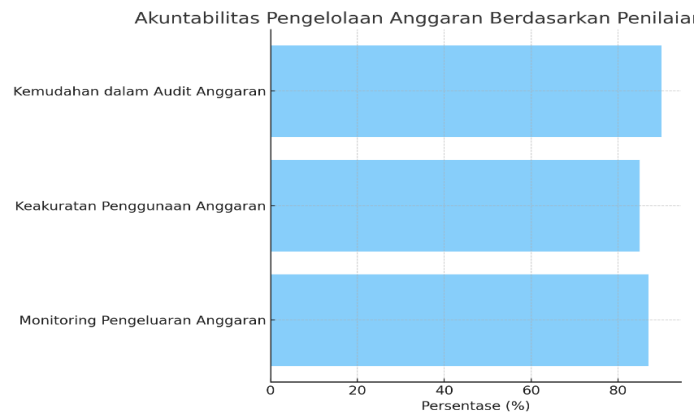


Diagram 5. Accountability Level of Budget Management

Table 5 and Diagram 5. The results indicate that the implementation of the electronic procurement system has significantly improved budget management accountability. A majority of respondents 87% of procurement officials, 83% of suppliers, and 80% of the general public reported that tracking procurement expenditures had become easier. This suggests that the e-purchasing system enables clearer and more accessible monitoring of spending throughout the procurement process. Moreover, the accuracy of budget utilization also received favorable assessments, with 90% of procurement officials, 86% of suppliers, and 78% of the public stating that the system has improved the precision of budget management. Similarly, the budget auditing process was perceived as more streamlined, with 90% of procurement officials, 86% of suppliers, and 82% of the public indicating that audits have become easier and more straightforward to conduct. Overall, the survey findings demonstrate that the use of the e-purchasing system in goods and services procurement enhances both the transparency and accountability of budget management.

3.5. Cost Implications of Procurement Before and After the Implementation of the E-Purchasing System

One of the primary objectives of implementing the e-purchasing system is to enhance cost efficiency in the procurement of government goods and services. Through the digitalization of procurement processes, the system is expected to reduce unnecessary expenditures and minimize budgetary waste resulting from inefficiencies and irregularities. By streamlining procedures and promoting greater transparency and accountability, e-purchasing serves as a tool to optimize the use of public funds and support more disciplined fiscal management.

Table 6. Comparison of Procurement Costs Before and After E-Purchasing Implementation (2024–2025)

Year	Procurement Cost Before E-Purchasing (Rp)	Procurement Cost After E-Purchasing (Rp)	Cost Savings (%)
Before E-Purchasing (2023)	2.000.000.000	-	-
After E-Purchasing (2024–2025)	-	1.600.000.000	20%

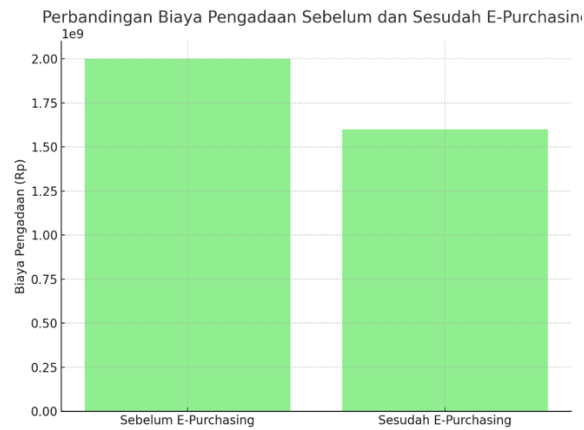


Diagram 6. Comparison of Procurement Costs Before and After E-Purchasing

Table 6 and Diagram 6. The findings indicate that the implementation of the electronic procurement system has significantly reduced the cost of goods and services procurement in Kutai Timur Regency. Prior to the system's introduction in 2023, the total procurement expenditure reached IDR 2,000,000,000. However, following the adoption of the system in 2024–2025, procurement costs were successfully reduced by 20% to IDR 1,600,000,000. This reduction demonstrates that the e-purchasing system has effectively optimized the procurement process by minimizing various indirect costs—such as excessive bureaucracy and inflated expenses due to less competitive tendering procedures. As a result, the implementation of the electronic procurement system not only accelerates the procurement process but also delivers substantial economic benefits to local governments through more efficient and accountable public spending.

3.6. Challenges and Obstacles in the Implementation of the E-Purchasing System in Kutai Timur Regency

Although the e-purchasing system in Kutai Timur Regency offers numerous benefits—such as improved efficiency, transparency, and accountability—its implementation has encountered several challenges. A major issue is the limited information technology infrastructure in certain areas, resulting in inconsistent internet access. This has made it difficult for some procurement officials and suppliers to access and utilize the system effectively. Additionally, the adoption of the e-purchasing system demands substantial time and training, as some personnel are not yet accustomed to digital technologies. Organizational culture, which in some cases remains conservative, may also hinder the transition from conventional procurement methods to digital workflows. Concerns have also been raised regarding data security and the potential for technical disruptions that could impede procurement processes. Furthermore, inconsistencies in coordination between internal units and external suppliers have occasionally disrupted procurement execution. To address these challenges, the Kutai Timur government must continue strengthening digital infrastructure, enhancing human resource capabilities, and implementing technical improvements to ensure the system operates more efficiently and sustainably.

4. Discussion

The implementation of the e-Purchasing system in Kutai Timur Regency has demonstrably increased the number of procurement transactions and reduced associated costs. This finding aligns with the principles of Modern Procurement Management, which argue that the use of information technology in goods and services procurement enhances budget management, transparency, and efficiency (Monczka et al., 2009). The results also support previous research by Wibowo et al. (2022), which found that the adoption of electronic government systems in local administrations can expedite procurement processes and reduce operational expenditures.

In line with Rakhman's (2024) argument, digital procurement has the potential to improve efficiency by up to 40% and strengthen accountability through digital audit trails—an assertion corroborated by the reduced procurement processing times documented in this study. The electronic procurement system fosters both efficiency and accountability throughout the procurement process. Each step of procurement is digitally recorded, facilitating easier auditing and oversight by the public and relevant institutions. This mechanism significantly reduces the likelihood of irregularities and corrupt practices, longstanding issues within conventional procurement systems.

Moreover, the e-Purchasing system in Kutai Timur enables easier reporting and monitoring of procurement data, contributing to improved financial governance that emphasizes value for money (Nahuway & Tamaela, 2020). This underscores the transformative potential of technology in enhancing organizational performance, particularly in procurement management. According to Hood's (1991) theory of good governance, public participation and information accessibility are vital components. The use of an e-Purchasing system enhances transparency by making procurement information publicly accessible, thereby reducing the potential for corruption and increasing accountability.

This study also supports the findings of Rahmawati & Priambodo (2025), who emphasized the importance of electronically tracking and recording procurement budgets to ensure proper and transparent financial management. By leveraging digital records for auditing and oversight, the e-Purchasing system mitigates the risk of budget misuse—a persistent issue in government procurement processes. Nevertheless, challenges remain. As outlined in the e-Government literature, especially by Carter & Bélanger (2005), limitations in technological infrastructure and human resource capacity persist as key barriers to digital system adoption. Human factors and technological readiness continue to be major hurdles in the effective implementation of digital governance systems.

5. Conclusions

The use of the electronic procurement system in Kutai Timur Regency has demonstrated that the procurement process for goods and services has become more efficient, transparent, and timely. This aligns with theoretical perspectives and previous research findings regarding the benefits of technology in procurement management. The adoption of digital systems has been proven to reduce bureaucratic procedures, lower the risk of corruption, and enhance accountability. However, performance disparities among government agencies (OPD) remain, largely influenced by the readiness of human resources, technological infrastructure, and internal resistance to change. Therefore, strengthening human resource capacity and improving IT infrastructure are critical components in ensuring the sustainability and optimization of the regional government's e-Purchasing system.

References

- Bappenas. (2022). *Rencana Induk Pengembangan Industri Digital Indonesia 2023 – 2045*. Bappenas.
- Carter, L., & Belanger, F. (2005). The utilization of e-government services: citizen trust, innovation and acceptance factors. *Information Systems Journal*, 15, 5–25.
- Fazeka, M., & Blum, J. R. (2021). Improving Public Procurement Outcomes Review of Tools and the State of the Evidence Base. *Policy Research Working Paper*.
- Hood, C. (1991). A Public Management for All Seasons? *Public Administration*, 69(1), 3–19.
- KPK. (2023). *Peran Serta Masyarakat dalam Mencegah Korupsi Pengadaan Barang dan Jasa*. Komisi Pemberantasan Korupsi.
- LKPP. (2021). *Peraturan Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah Nomor 9 Tahun 2021 tentang Toko Daring dan Katalog Elektronik*. Lembaga Kebijakan Pengadaan Barang/Jasa Pemerintah.
- LKPP. (2024). *-Siaran Pers- Presiden RI Prabowo Subianto Resmi Luncurkan E-Katalog Versi 6.0*. <https://www.lkpp.go.id/read/bu/siaran-pers-presiden-ri-prabowo-subianto-resmi-luncurkan-e-katalog-versi-6-0>.
- Monczka, R. M., Handfield, R. B., Giunipero, L. C., & Patterson, J. L. (2009). *Purchasing and Supply Chain Management, 4e*. Cengage Learning.
- Nahuway, V. F., & Tamaela, E. Y. (2020). Model Efektifitas Dan Efisiensi E-Procurement Serta Dampaknya Terhadap Kepuasan Pengguna Di Provinsi Maluku. *Jurnal MANEKSI*, 9(1), 275–282.
- Rahmawati, V., & Priambodo, B. (2025). Implementasi E-Katalog Dalam Meningkatkan Transparansi Pengadaan Barang Dan Jasa Di Sekretariat Daerah Kabupaten Kediri. *Manajemen Strategis Terkini*, 7(1), 14–34.
- Rakhman, A. A. (2024). Tinjauan Sistematis Tentang Pengaruh Digitalisasi Pengadaan Terhadap Efisiensi dan Transparansi di Sektor Publik Indonesia. *Jurnal Pengadaan Indonesia*, 3(2), 78–90.
- Saputra, W. A., Puspendari, D. A., & Kurniawan, M. F. (2019). Evaluasi Pengadaan Obat Dengan E-Purchasing Melalui E-Catalogue Di Rumah Sakit Jiwa Grhasia Daerah Istimewa Yogyakarta Tahun 2017 – 2018. *Jurnal Kebijakan Kesehatan Indonesia : JKKI*, 8(3), 113–120.
- Sugiyono. (2018). *METODE PENELITIAN KUANTITATIF, KUALITATIF DAN R & D*. Alfabeta.
- UNDP. (2021). *UNDP Procurement for Sustainable Development Strategy 2022-2025*. UNDP.

Wibowo, Y. A., Trijeti, T., & Irwanto, R. (2022). Effectiveness Of Government's Electronic Procurement Of Goods And Services In Its Role Within The Government's Projects. *International Journal of Civil Engineering and Infrastructure*, 2(1), 57–69.