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The Role of Artificial Intelligence in Enhancing Organizational Procurement Productivity: A Systematic Literature Review

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ABSTRACT

Digital transformation is driving significant changes in various organizational functions, including in the procurement process. Traditional procurement processes still often rely on manual activities and limited data analysis that can hinder organizational productivity. This study aims to analyze the role of Artificial Intelligence (AI) in increasing procurement productivity through the use of data analysis and procurement process automation. The research method used is a literature study by examining various studies related to the implementation of AI in Procurement and supply chain management published in the period 2020–2026. The results of the study show that AI technology such as machine learning, predictive analytics, and intelligent automation is able to improve the efficiency of the procurement process through predicting needs, automatic supplier evaluation, and data-based decision-making. AI implementation also contributes to reducing human error, increasing transparency, and accelerating the procurement cycle. Thus, the integration of AI in the Procurement system can increase organizational productivity and support digital transformation in supply chain management.

Keywords: artificial intelligence; Procurement productivity; Digital Procurement; Decision Support System

INTRODUCTION

The development of information technology and digitalization has driven significant transformations in various industrial sectors, including in supply chain management and functions Procurement organization. Digital transformation enables organizations to optimize business processes through the use of data-driven technologies, process automation, and smarter and adaptive decision-making systems (Chatterjee et al., 2023; Culot et al., 2024). In the context of modern organizations, the Procurement It no longer only acts as an administrative activity in the procurement of goods and services, but has evolved into a strategic function that contributes to operational efficiency, cost control, and increased organizational competitive advantage.

Procurement has a crucial role in ensuring the availability of goods and services in a timely manner, with efficient costs and quality that suits operational needs. However, in practice, many organizations still face various challenges in management Procurement. The procurement process is often still manual, involves limited data analysis, and relies on individual experience in decision-making. These conditions have the potential to cause process inefficiencies, increased risk of human error, and delays in the procurement cycle (Liu, 2026; Logožar, 2025).

Along with the development of digital technology, Artificial Intelligence (AI) is starting to be used to improve the effectiveness and efficiency of the process Procurement. AI enables organizations to process and analyze large amounts of data quickly and accurately, supporting more data-driven decision-making (Data-driven decision making).

In the context of supply chain and Procurement, AI technology can be applied in various activities such as Demand Forecasting, supplier performance evaluation (Supplier Performance Analysis), risk detection in the supply chain, as well as automation of administrative processes in procurement (Guida et al., 2023; Ofodile, 2023).

A number of studies show that the application of AI technology has a significant impact on improving supply chain performance and Procurement. Utilization Predictive Analytics Enable organizations to more accurately predict procurement needs based on demand patterns and historical data. In addition, technology Machine Learning It can also be used to automatically evaluate suppliers taking into account various performance indicators, such as product quality, price, and timeliness of delivery (Ghasemi et al., 2025; Tuo et al., 2024). The implementation of AI also contributes to increasing process transparency Procurement through a real-time data-based monitoring system, as well as improving the quality of decision-making through more comprehensive data analysis (Badrinarayanan, 2024).

Although various studies have discussed the application of Artificial Intelligence In the context of supply chain management, most studies still focus on aspects of logistics, distribution, and inventory management. Research that specifically examines the role of Artificial Intelligence in increasing the productivity of the Procurement The organization is still relatively limited (Culot et al., 2024; Teixeira & Ferreira, 2025). In fact, Procurement is one of the strategic functions that has a direct impact on operational cost efficiency and overall organizational performance.

Based on the research gap, this research aims to analyze the role of the application of Artificial Intelligence in increasing organizational procurement productivity through the use of data analysis, procurement process automation, and technology-based decision-making systems. This research is expected to make a conceptual contribution in enriching the literature on the application of AI in the Procurement function, as well as providing practical implications for organizations in optimizing digital transformation in the procurement process.

METHOD

This research used a Systematic Literature Review (SLR) to analyze the role of Artificial Intelligence (AI) in increasing productivity within procurement organizations. The SLR approach was chosen because it provides a comprehensive and structured synthesis of previous studies, enabling the identification of trends, patterns, and research gaps related to the application of AI in procurement and supply chain management.

This study applied a qualitative, descriptive-analytical method through a systematic literature review to examine developments in the use of AI in procurement processes and to analyze its contribution to improving organizational efficiency and productivity.

To ensure a comprehensive understanding, relevant literature was identified and selected from various academic sources. More than 50 scientific articles were collected, with over 30 core studies forming the basis of the analysis. The selected literature

included empirical and conceptual studies, providing a representative overview of recent developments in AI applications in procurement and supply chain management.

As part of the initial analysis stage, key representative studies were summarized, as presented in Table 1.

Table 1. Literature Review

Author	Year	Technology	Application in Procurement	Key Findings
Over	2026	AI Adoption Model	Procurement Decision-Making	Improves efficiency and cost reduction
Al-Huzaili et al.	2025	AI & Predictive Analytics	Sustainable Supply Chain	Improves efficiency and sustainability
Culot et al.	2024	AI & Machine Learning	Supply Chain Integration	Enhances decision-making and performance
Logožar	2025	AI Applications	Supply Chain & Procurement	Improves forecasting and risk management
Tuo et al.	2024	AI Capabilities	Supply Chain Performance	Enhances resilience and operational performance
Chatterjee et al.	2023	Big Data Analytics / AI	Decision-Making & SCM	Improves decision-making and firm performance
Ofodile	2023	AI Optimization	Supply Chain Operations	Enhances agility and predictive capability
Guida et al.	2023	AI in Procurement	Procurement Process	Enhances efficiency and strategic decisions
Danieli	2026	Digital Transformation & AI	Public Procurement	Improves transparency and governance
Drouzi & Rajaa	2026	AI in Green SCM	Sustainable Procurement	Improves sustainability and resource optimization
Katragadda	2026	AI & ML	Supply Chain Resilience	Enhances risk mitigation and adaptability
Husnain	2026	Big Data & Deep Learning	Decision Support Systems	Improves data-driven decision-making
Coglianese	2023	AI Governance	Procurement Systems	Highlights transparency and algorithmic risks
Ayinaddis	2025	AI Adoption	Organizational Decision	Highlights adoption maturity challenges
Badrinarayanan	2024	AI in Procurement	Procurement Transformation	Improves efficiency and automation
Balkan & Akyuz	2025	AI & ML	Procurement Decision Support	Enhances decision-support capabilities
Chen et al.	2023	Digital Transformation	Organizational Resilience	Improves adaptability and performance

Author	Year	Technology	Application in Procurement	Key Findings
Ghasemi et al.	2025	AI Applications	Sustainable Supply Chain	Enhances sustainability and efficiency
Jubair	2025	AI Integration	Supply Chain Systems	Improves coordination and performance
Mhaskey	2024	AI & ERP	Procurement Systems	Improves integration and automation
Naife et al.	2025	AI Risk Analytics	Supply Chain Risk	Enhances risk assessment capability
Nguyen & Wang	2025	AI Optimization	Supply Chain Operations	Improves operational efficiency
Nweje & Taiwo	2025	Predictive AI	Demand Forecasting	Improves forecasting accuracy
Pereira et al.	2026	AI & Industry 4.0	Digital Supply Chain	Improves sustainability and integration
Richey et al.	2023	AI in Logistics	Supply Chain Management	Enhances integration and efficiency
Squirt	2025	Predictive Analytics	Inventory & Forecasting	Improves demand prediction accuracy
Samuels	2025	AI Review	Supply Chain	Identifies trends and research gaps
Smyth et al.	2024	AI & Prescriptive Analytics	Supply Chain Resilience	Enhances resilience and decision-making
Teixeira & Ferreira	2025	AI in SCM	Supply Chain Performance	Improves operational outcomes
Zhang	2025	AI Applications	Global Supply Chain	Improves global supply chain efficiency

(Source: Data Processing, 2026)

Based on Table 1, various studies show that Artificial Intelligence technology has a significant role in improving supply chain performance and procurement processes. A study by Chatterjee et al. (2023) shows that the use of big data analytics in the supply chain is able to improve operational efficiency through improving the quality of decision-making, forecasting accuracy, and optimizing data-driven business processes. Furthermore, Culot et al. (2024) emphasized that the implementation of AI contributes to improving the quality of decision-making and overall supply chain performance.

Logožar (2024) added that the application of AI can improve forecasting accuracy as well as risk mitigation capabilities in the supply chain. The findings are reinforced by Ghasemi et al. (2025), who show that the application of AI in the context of sustainable supply chains not only improves operational efficiency, but also contributes to improving the sustainability of supply chain systems. In addition, Tuo et al. (2024) show that AI capabilities have an important role in increasing supply chain resilience, which has a direct impact on improving organizational operational performance.

In the context of supply chain operations, Ofodile (2023) shows that the use of AI can increase the agility and predictive ability of organizations in responding to demand

dynamics. Meanwhile, Richey et al. (2023) emphasized that the integration of AI in logistics systems is able to improve efficiency and coordination between processes in the supply chain.

From perspective Procurement, Guida et al. (2023) show that the application of AI plays a role in improving the efficiency of the procurement process as well as supporting strategic decision-making. Research also shows that AI adoption in Procurement Able to improve the quality of decision-making through more accurate data analysis (Liu, 2026). In addition, other studies emphasize that the use of AI-based decision support systems can improve speed and accuracy in decision-making Procurement(Brown et al., 2020).

Furthermore, Husnain's research shows that integration Big Data, AI, and Deep Learning decision-making system is able to increase the effectiveness of data analysis by real-time (Husnain, 2026). This is in line with research by Ferreira et al. (2025) which shows that the application of AI has a positive impact on improving performance Supply Chain through optimization of operational processes.

From the perspective of digital transformation, Danieli emphasized that the application of AI in Procurement can improve transparency and governance of the procurement process (Danieli, 2026). However, Coglianese reminded that the use of AI also poses challenges related to algorithm transparency and potential bias in decision-making (Coglianese, 2023).

In the context of sustainability, it shows that AI contributes to improving the efficiency of resource use as well as supporting Green Supply Chain Management (Drouzi & Rajaa, 2026). Meanwhile, Katragadda emphasized that the application of AI-based Machine Learning can improve the organization's ability to manage risk and uncertainty through improved Resilience (Subba Rao Katragada, 2026).

In terms of technology adoption, Andersson (2025) shows that the level of maturity of organizations in adopting AI is an important factor in determining the success of the implementation of this technology (Andersson & Rosenqvist, 2026). This is reinforced by Jubair, who emphasizes that the integration of AI in the system Supply Chain can improve coordination and overall operational performance (Jubair, 2025).

In addition, the concept Procurement 4.0 AI-based ones that are able to drive the automation of the procurement process and improve operational efficiency (Althabatah et al., 2023). Meanwhile, Samuel through a systematic literature review identified the main trends of the application of AI in Supply Chain and Procurement, and highlighting research gaps that still need to be further studied (Samuels, 2025).

Overall, the literature synthesis shows that the application of Artificial Intelligence not only contributes to increasing operational efficiency, but also strengthens the organization's decision-making capabilities, improving supply chain resilience, and supporting digital transformation in the Procurement function. However, the success of AI implementation is highly dependent on the readiness of organizations to manage data, technology, and human resources in an integrated manner.

To improve the transparency and replication of the study, the SLR process in this study adopts systematic stages that include identification, screening, eligibility, and

inclusion of relevant literature. This approach ensures that the literature selection process is carried out objectively and in a structured manner, resulting in a valid and academically accountable synthesis.

This research was carried out through several main stages as follows:

1. Identify topics and formulation of research questions related to Artificial Intelligence in Procurement and supply chain management.
2. Collection of scientific literature from various reputable academic databases.
3. Literature selection based on inclusion and exclusion criteria.
4. Analysis and synthesis of the literature to identify research patterns, trends, and gaps.

Sources and Data Collection

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3. Literature selection based on inclusion and exclusion criteria.
4. Analysis and synthesis of the literature to identify research patterns, trends, and gaps.

Literature Selection Criteria

In the literature selection process, this study uses several inclusion and exclusion criteria to ensure the quality of the sources used.

1. Inclusion criteria include:
    - Scientific articles that discuss the application of Artificial Intelligence in the supply chain or Procurement.
    - Articles published in scientific journals or proceedings of international conferences.
    - Publications published in the 2020–2026 time frame.
    - Articles that discuss the impact of AI on operational efficiency or organizational decision-making.
2. Exclusion criteria include:
    - Articles that do not directly discuss Artificial Intelligence in Procurement or supply chain
    - Articles that are not available in full-text
    - Non-academic publications such as blogs, non-scientific reports, or sources that do not go through a peer-review process

Through the selection process, this study identified a number of relevant literature to be analyzed in this study.

Data Analysis Techniques

Data analysis was carried out using a thematic analysis approach to the selected literature. Each article is analyzed to identify several key aspects, namely:

1. Types of Artificial Intelligence technology used
2. Areas of application of AI in Procurement
3. The impact of AI application on procurement efficiency and productivity
4. Research contribution to the development of technology-based procurement systems.

The results of the analysis are then synthesized to identify the pattern of the application of Artificial Intelligence in Procurement and its implications for increasing organizational productivity.

Research Conceptual Framework

As part of the Systematic Literature Review-based research approach, a conceptual framework is needed to describe the flow of research thought and the relationships between the variables analyzed. This framework is compiled based on the synthesis of literature that has been studied in the previous stage. Figure 1 below shows the research framework that describes the flow of analysis in this study, starting from a literature review related to Artificial Intelligence in Procurement, followed by the identification of the role of AI in the Procurement process, to its implications for increasing organizational productivity.

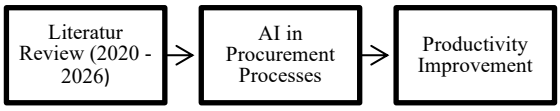

Figure 1. Research Framework

(Source: Data Processing, 2026)

Based on the research framework, this study emphasizes that the use of Artificial Intelligence in Procurement not only plays a role as an operational tool, but also as a strategic enabler in increasing the efficiency and effectiveness of the procurement process.

Furthermore, based on the results of the literature review that has been conducted, this study proposes a conceptual framework that describes the relationship between the application of Artificial Intelligence and the increase in organizational procurement productivity .

Within this framework, Artificial Intelligence capabilities play a key role in enabling organizations to automate the procurement process, improve data analysis capabilities, and support more effective decision-making. The implementation of this technology is ultimately expected to increase procurement productivity through increasing the efficiency of the procurement process, reducing human error, and accelerating the procurement cycle. To clarify the relationship between the variables studied, the conceptual model of the study is presented in Figure 2 below.

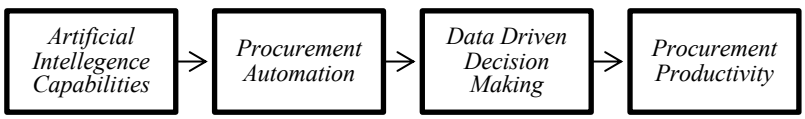

Figure 2. Conceptual Model of the relationship between AI and Productivity Procurement

Source: Data Processing, 2026

Figure 2 shows that Artificial Intelligence capabilities play a role as the main variable that affects Procurement productivity through two main mechanisms, namely Procurement automation and data-driven decision making. Both mechanisms function as mediators that bridge the use of AI technology with improving the organization's procurement performance.

RESULTS AND DISCUSSION

The Role of Artificial Intelligence in the Procurement Process

Based on the results of the literature synthesis, the application of Artificial Intelligence (AI) shows significant contribution in improving process efficiency and effectiveness Procurement. AI enables organizations to process large amounts of data quickly and accurately, supporting data-driven decision-making (Data-driven decision making). Studies show that the integration of AI in Supply Chain able to improve visibility, coordination, and responsiveness to changing demands (Robert Glenn Richey Jr., Soumyadeb Chowdhury, Beth Davis-Sramek, Mihalis Giannakis, 2023).

In context Procurement, AI technology has been used in a variety of key activities, such as Demand Forecasting, supplier evaluation, as well as risk detection in the supply chain. Utilization Machine Learning Allows supplier evaluations to be carried out more objectively and comprehensively by considering various performance indicators simultaneously (Al-Huzaili, Sami & Mokhtar, Ahmad & Muhamat, 2025; Liu, 2026; Logožar, 2025). In addition, AI also enables proactive risk identification through historical data analysis and real-time, so that organizations can improve their ability to manage uncertainty in the supply chain (Tuo et al., 2024; Umar et al., 2022).

AI-Based Procurement Automation

Implementation Artificial Intelligence (AI) in Procurement It plays an important role in driving the automation of the procurement process. This technology allows organizations to reduce reliance on manual processes, thereby improving operational efficiency and minimizing the potential for human error. Concept Procurement 4.0 demonstrate that the integration of AI in the system Procurement can improve the speed and accuracy of the procurement process (Althabatah et al., 2023).

In addition, AI also supports automation in various administrative activities, such as document processing, contract analysis, and vendor management. This is reinforced by research showing that AI-based systems are able to improve process efficiency Procurement significantly through integration with other digital technologies, such as Big Data Analytics and systems Enterprise Resource Planning (ERP) (Johnson et al., 2023; Smyth et al., 2024).

Data-Driven Decision Making in Procurement

One of the main contributions Artificial Intelligence (AI) in Procurement is his ability to support Data-driven decision making. The utilization of AI enables organizations to produce Insight more accurate through complex and dynamic data analysis. Studies show that the use of Big Data Analytics and AI significantly improve

the quality of decision-making as well as organizational performance (Chatterjee et al., 2023; Teixeira & Ferreira, 2025; Zhang, 2025).

Furthermore, the integration of AI with Decision Support Systems enable organizations to improve the speed and accuracy of decision-making, especially in uncertain business environment conditions (Brown et al., 2020; Wilson & Burleigh, 2025). In addition, AI also supports prediction-based decision-making through the use of Predictive Analytics, which allows organizations to anticipate future needs as well as risks(Nweje & Taiwo, 2025; Rungta, 2025).

The Impact of AI on Procurement Productivity

Based on the results of the literature analysis, the application of Artificial Intelligence (AI) has a direct impact on productivity increase Procurement organization. The improvement is reflected in operational efficiency, reduced procurement costs, and cycle acceleration Procurement. In addition, the quality of decision-making has also improved because it is supported by more comprehensive data analysis (Chatterjee et al., 2023; Chen et al., 2023).

AI also contributes to improving Supply Chain Resilience and the organization's ability to deal with uncertainty. Studies show that organizations that adopt AI have better ability to manage risk as well as improve overall operational performance (Naife et al., 2025; Nguyen & Wang, 2025; Subba Rao Katragada, 2026). In addition, the application of AI also supports increased transparency in the process Procurement, thereby increasing accountability and trust in the procurement system (Coglianese, 2023; Daniel, 2026).

In the operational context, the implementation of AI also encourages increased agility and predictive capabilities of organizations through the utilization of Predictive Analytics as well as digital system integration. This allows organizations to respond to changing demand and market dynamics more quickly and accurately (Brown et al., 2020; Rungta, 2025)

To gain a more comprehensive understanding of the development of research related to the application of Artificial Intelligence in Procurement and supply chain management, a synthesis of various relevant previous studies was carried out. A summary of the results of the literature synthesis is presented in Table 3.

Table 3. Literature Synthesis

No	Author & Year	Research Focus	Method	Key Findings
1	S. Chatterjee et al. (2023)	Big data analytics in supply chain	Empirical study	Improves decision-making, forecasting accuracy, and firm performance (Chatterjee et al., 2023)
2	G. Culot et al. (2024)	AI in supply chain management	Systematic literature review	Enhances integration, decision-making, and performance outcomes (Culot et al., 2024)
3	K. Logožar (2024)	AI applications in supply chain	Systematic literature review	Improves forecasting, inventory management, and

No	Author & Year	Research Focus	Method	Key Findings
				risk mitigation (Logožar, 2025)
4	A. R. Teixeira et al. (2025)	AI in SCM advancements	Literature review	Enables data-driven optimization and digital transformation (Teixeira & Ferreira, 2025)
5	Smyth et.al (2024)	Digital technologies & supply chain	Empirical analysis	Improves firm performance and supply chain integration (Smyth et al., 2024)
6	B. Liu (2026)	AI adoption in Procurement decision-making	Quantitative analysis	Improves efficiency and decision-making quality (Liu, 2026)
7	A. Ghasemi et al. (2025)	AI in sustainable supply chain	Bibliometric analysis	Enhances sustainability, efficiency, and resilience (Ghasemi et al., 2025)
8	G. Tuo et al. (2024)	AI capability & supply chain performance	Empirical study	Improves resilience and operational performance (Tuo et al., 2024)
9	A. Badrinarayanan (2024)	AI in Procurement transformation	Technical analysis	Improves efficiency, automation, and cost reduction (Badrinarayanan, 2024)
10	O. C. Ofodile et al. (2023)	AI optimization in supply chain	Conceptual study	Enhances agility and predictive capability (Ofodile, 2023)
11	M. Guida et al. (2023)	AI in Procurement process	Literature review	Improves Procurement efficiency and strategic decision-making (Guida et al., 2023)
12	G. Danieli (2026)	Digital Procurement transformation	Conceptual study	Improves governance, transparency, and compliance (Danieli, 2026)
13	M. Drouzi & M. Rajaa (2026)	AI in green supply chain	Literature review	Enhances sustainability and resource optimization (Drouzi & Rajaa, 2026)
14	S. R. Katragadda (2026)	AI-driven resilience in supply chain	Conceptual study	Improves risk mitigation and adaptability (Subba Rao Katragada, 2026)
15	A. Husnain (2026)	AI & big data decision systems	Conceptual study	Improves data-driven decision-making capabilities (Husnain, 2026)
16	Ivanov (2026)	Agentic AI & digital twins in supply chain	Conceptual framework	Enhances real-time decision-making, integration, and adaptive supply chain systems (Ivanov, 2026)
17	C. Coglianese (2023)	AI governance in Procurement	Conceptual study	Highlights transparency issues and algorithmic bias (Coglianese, 2023)
18	M. Richey et al. (2023)	AI in logistics & SCM	Conceptual study	Improves coordination and operational efficiency (Robert Glenn Richey Jr., Soumyadeb Chowdhury, Beth Davis-

No	Author & Year	Research Focus	Method	Key Findings
				Sramek, Mihalis Giannakis, 2023)
19	M. Althabatah (2023)	Procurement 4.0	Conceptual study	Enhances automation and digital Procurement Processes (Althabatah et al., 2023)
20	P. E. Andersson (2025)	AI adoption in organizations	Empirical study	Highlights maturity level and adoption challenges (Andersson & Rosenqvist, 2026)
21	H. Jubair (2025)	AI integration in supply chain	Conceptual study	Improves coordination and system performance (Jubair, 2025)
22	A. C. A. Ferreira et al. (2025)	AI & supply chain performance	Empirical study	Improves operational efficiency and performance outcomes(Teixeira & Ferreira, 2025)
23	D. Balkan & Akyuz (2025)	AI & ML in Procurement decision support	Systematic literature review	Enhances decision-support capabilities and identifies benefits & challenges in Procurement (Balkan & Akyuz, 2025)
24	Pereira et al. (2026)	AI in digital supply chain & sustainability	Systematic literature review (PRISMA)	Improves efficiency, sustainability, and integration of supply chain technologies (Pereira et al., 2026)
25	Mhaskey (2024)	AI & ERP integration in Procurement	Conceptual study	Improves system integration, automation, and decision-making (Mhaskey, 2024)

Source: Data Processing, 2026

Based on Table 3, it can be identified that most of the research emphasizes the role of Artificial Intelligence (AI) in improving supply chain performance and procurement processes through the use of data analysis, process automation, and technology-based decision-making systems. Technologies such as machine learning, predictive analytics, and decision support systems are the main components in supporting digital transformation in the Procurement function.

These findings are also supported by research by Badrinarayanan (2024) which shows that the implementation of AI in Procurement contributes to increasing operational efficiency, process automation, and reducing procurement costs through the use of data-based technology. In addition, research by Ofodile (2023) confirms that the application of AI in the supply chain allows for increased agility and predictive ability of organizations, so that the procurement process can be carried out more proactively and adaptive to market dynamics.

Furthermore, a synthesis of the literature shows that the application of AI provides three main implications for Procurement productivity. First, increasing operational efficiency through process automation and reducing manual activities. Second, improving

the quality of decision-making through a data-driven decision-making approach. Third, increasing transparency and risk management capabilities through a real-time data-based monitoring system.

However, some studies have also identified challenges in AI implementation, such as limited data quality, complexity of system integration, and issues related to algorithm governance and transparency. In addition, the level of maturity of the organization in adopting AI technology is also an important factor that affects the success of the implementation (Ayinaddis, 2025; Smyth et al., 2024).

Overall, these findings show that the integration of Artificial Intelligence in Procurement not only impacts improving operational efficiency, but also plays a strategic factor in improving organizational competitiveness in a dynamic business environment.

Challenges and Limitations of AI Implementation

Although the application Artificial Intelligence (AI) provides a wide range of benefits, a number of studies show that the implementation of this technology also faces significant challenges. One of the main challenges is the limited quality and integration of data, which can affect the accuracy and reliability of AI-based analysis results (Culot et al., 2024; Drouzi & Rajaa, 2026; Robert Glenn Richey Jr., Soumyadeb Chowdhury, Beth Davis-Sramek, Mihalis Giannakis, 2023).

In addition, the readiness of digital infrastructure and human resource competence are important factors in the successful implementation of AI in Procurement (Andersson & Rosenqvist, 2026; Chatterjee et al., 2023; Daniel, 2026). Organizations that do not have adequate digital capabilities tend to experience difficulties in adopting this technology optimally, potentially hindering the digital transformation process.

From a governance perspective, the use of AI also raises issues related to algorithm transparency and potential bias in decision-making (Coglianese, 2023; Wilson & Burleigh, 2025). This is an important challenge in the application of AI, especially in the context of Procurement which involves strategic decisions and has a far-reaching impact on the organization.

In addition, the complexity of integrating AI technology with existing systems, such as Enterprise Resource Planning (ERP) and other digital platforms, are also obstacles in optimal implementation (Johnson et al., 2023). The level of maturity of the organization in adopting technology (Digital Maturity) and resistance to change also affect the success of AI-based digital transformation (Andersson & Rosenqvist, 2026).

CONCLUSION

The literature review indicates that Artificial Intelligence (AI) plays a significant role in enhancing procurement productivity by automating processes, reducing manual work and human error, and enabling faster, more accurate, and data-driven decision-making through machine learning and predictive analytics. AI also improves transparency and strengthens supply chain risk management, while serving as a strategic enabler for resilience, sustainability, and overall organizational competitiveness. However, its implementation remains constrained by challenges such as poor data quality and

integration, limited digital infrastructure, insufficient workforce capabilities, organizational resistance to change, and governance concerns including algorithm transparency, data security, and bias. Overall, the success of AI adoption in procurement depends not only on technological capabilities but also on organizational readiness and effective governance. Future research should focus on developing practical frameworks for integrating AI into procurement systems, particularly in addressing data quality issues, enhancing human–AI collaboration, and ensuring ethical and transparent AI governance.

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