

Comparative Analysis of the Impact of Inventory Management on Organizational Performance

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ABSTRACT

This study aims to examine the impact of inventory management practices on organizational performance through a systematic literature review of five scholarly articles. The reviewed articles, originating from Indonesia, Ethiopia, Kenya, Uganda, and Zimbabwe, span various sectors including retail, manufacturing, and mining. Using comparative analysis, the study found that inventory management practices positively influence operational efficiency and organizational competitiveness. The findings also revealed that managerial knowledge serves as a key mediating factor that enhances the effectiveness of inventory practices, emphasizing the importance of human resource capability in supporting inventory systems.

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1. INTRODUCTION

Inventory management is an important element in the operational activities of an organization. Efficiently managed inventory is able to ensure the availability of goods or raw materials needed in the production, distribution, and customer service processes [1]. In practice, poor inventory management can cause various problems such as overstocks, stock shortages, waste of costs, to disruption in the smooth running of business processes [2]. Therefore, implementing the right inventory management strategy is necessary to maintain operational stability and improve organizational effectiveness and efficiency [3].

In an increasingly competitive global business world, the effect of inventory management on organizational performance has been the focus of various studies in various countries and industrial sectors [4]. Various studies show that the use of modern information systems, strict control, and good managerial understanding of inventory dynamics play an important role in improving the company's operational and financial performance [5]. However, the results of these studies are not always uniform, as they are influenced by different geographical contexts, levels of technological advancement, and industry sector characteristics [1].

Moreover, in developing countries, inventory management plays a more crucial role due to infrastructure limitations, inconsistent supply chains, and lower levels of technological adoption. According to Panigrahi et al. (2024), ineffective inventory practices often lead to resource underutilization and lost opportunities, particularly for small and medium enterprises. Additionally, the integration of digital tools like IoT and data analytics has begun to transform inventory practices, although adoption remains varied depending on sector and country readiness [7][13].

This study aims to critically review five scholarly articles that examine the relationship between inventory management practices and organizational performance in various developing countries, namely Indonesia, Ethiopia, Kenya, Uganda, and Zimbabwe. The five studies reflect diverse approaches and findings influenced by differences in country contexts as well as industry sectors, such as retail, manufacturing, mining, and microenterprises. Through this comparative study, it is hoped to gain a deeper understanding of how inventory management contributes to organizational success and what factors strengthen or weaken this influence.

2. METHOD

This research used a systematic literature review method involving five scientific articles. The inclusion criteria included:

1. Articles focused on the topic of inventory management,
2. Investigated the influence on organizational performance, and
3. Contained empirical data with a clear research method and findings.

The literature search was conducted using online databases such as Google Scholar, ResearchGate, and DOAJ with keywords: “Inventory Management”, “Organizational Performance”, and “Developing Countries”. The initial search produced 25 articles, which were then screened based on relevance, publication credibility, empirical content, and alignment with the research objective. After the screening and eligibility assessment process, 5 articles were selected for final review.

Article Selection Flow:

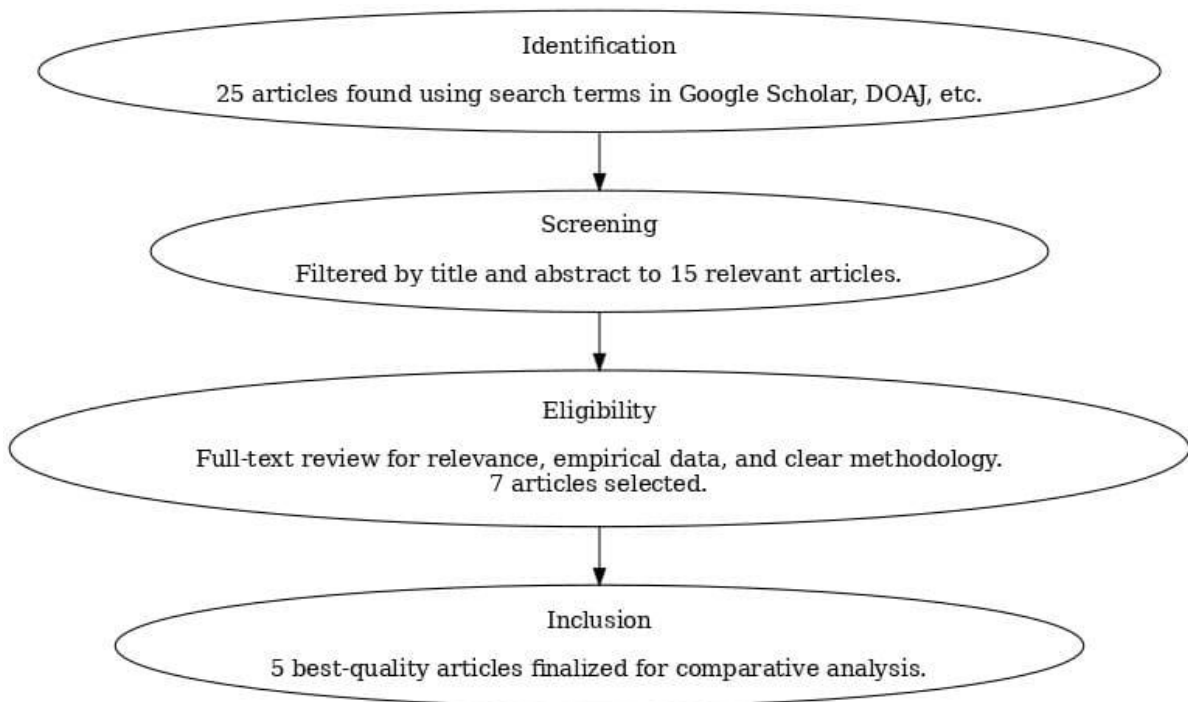


Figure 1. diagram flow selects the articles

These five articles were analyzed comparatively to explore the different impacts of inventory management practices across various sectors and national contexts. Below is the summary of the reviewed journal articles:

Table 1. Journal Articles reviewed

No.	Author	Title	Method	Analysis Technique	Data Source
1.	Rahman, M. F., & Nursyamsiah, S. (2023).	The Effect of Inventory Management Practices on Company Performance Mediated by Inventory Management Knowledge: Empirical Study on Retail Stores in Yogyakarta.	Quantitative	Structural Equation Modeling (SEM) with the help of SmartPLS	Primary data from questionnaires distributed to 128 samples, namely owners / managers of retail stores in Yogyakarta.
2.	Atnafu, D., & Balda, A. (2018).	The impact of inventory management practice on firms' competitiveness and organizational performance: Empirical evidence from micro and	Quantitative	Partial Least Squares (PLS) path modeling	Survey of 225 respondent micro and small business owners/managers in Addis Ababa, Ethiopia.

No.	Author	Title	Method	Analysis Technique	Data Source
		small enterprises in Ethiopia.			
3.	Rutagira, Y., & Awichi, R. O. (2020).	Statistical analysis of inventory management systems on organizational performance.	Quantitative and qualitative	Correlational Design	Correlational Design Questionnaires and interviews were distributed to employees from various divisions at Rutungu Distributors Ltd, including warehouse, logistics, and operations management in Kampala, Uganda.
4.	Musau, E. G., Namusonge, G., Makokha, E. N., & Ngeno, J. (2017).	The effect of inventory management on organizational performance among textile manufacturing firms in Kenya.	Quantitative	Linear Regression	Data from 139 respondents in 15 textile companies in Nairobi County.
5.	Mawonde, D., & Demberere, C. (2022).	The Effect of Inventory Control Systems on Organisational Performance in the Mining Sector of Zimbabwe.	Quantitative	Structural Equation Modelling (SEM)	Survey with a sample of 203 mining companies in Zimbabwe.

3. RESULTS AND DISCUSSION

This research reviews five key articles that specifically address the role of inventory management in influencing the performance of business organizations.

Table 2. Comparative Analysis of Scientific Articles

No.	Author	Title	Country	Sector	Findings
1.	Rahman, M. F., & Nursyamsiah, S. (2023).	The Effect of Inventory Management Practices on Company Performance Mediated by Inventory Management Knowledge: Empirical Study on Retail Stores in Yogyakarta.	Indonesia	Retail	The results show a significant effect on company performance, but this effect is strengthened by the presence of managerial knowledge.
2.	Atnafu, D., & Balda, A. (2018).	The impact of inventory management practice on firms' competitiveness and organizational performance: Empirical evidence from micro and small enterprises in Ethiopia.	Ethiopia	Micro & Small Enterprises	Results show that in the small-scale business sector, discipline in applying the basic principles of inventory management is sufficient to have a noticeable impact on performance.
3.	Rutagira, Y., & Awichi, R.	Statistical analysis of inventory management systems on organizational	Uganda	Distribution	Results show that in a sector that depends on production continuity,

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No.	Author	Title	Country	Sector	Findings
	R. O. (2020).	performance.			timely inventory planning is critical to smooth business processes and customer satisfaction.
4.	Musau, E. G., Namusonge, G., Makokha, E. N., & Ngeno, J. (2017).	The effect of inventory management on organizational performance among textile manufacturing firms in Kenya.	Kenya	Textile manufacturing	Results show that technology-based inventory management systems significantly improve operational efficiency and decision-making effectiveness.
5.	Mawonde, D., & Demberere, C. (2022).	The Effect of Inventory Control Systems on Organisational Performance in the Mining Sector of Zimbabwe.	Zimbabwe	Mining	Results show that the use of information technology-based control systems helps reduce the risk of loss of goods, theft, and waste of stock.

Based on table 2, the results of the comparative analysis of the five articles reviewed show that inventory management practices generally have a significant effect on improving organizational performance, although the level of influence and the approach used vary depending on the country context and industry sector. The five articles were conducted in developing countries, namely Indonesia, Ethiopia, Kenya, Uganda, and Zimbabwe, with industry sectors varying from retail, micro-enterprises, manufacturing, to mining. These differences provide a comprehensive picture of the application of inventory management in various conditions and levels of economic progress.

In general, the effectiveness of inventory management is reflected in increased operational efficiency, reduced waste, and improved planning of goods requirements. In the Indonesian study, inventory management practices in retail stores showed a significant effect on firm performance, but this effect was strengthened by the presence of managerial knowledge. Inventory management knowledge becomes an important mediating variable, as it enables more informed and efficient decision-making in stock management [4]. This shows that the competence of human resources in understanding and implementing inventory management principles determines the success of the system used.

Meanwhile, in the context of micro and small enterprises in Ethiopia, research found that basic practices such as stock recording, control of incoming and outgoing goods, and inventory rotation have a direct impact on organizational competitiveness and performance. Although technological limitations are a constraint, consistent application of inventory management principles still has a positive impact [1]. This suggests that in the small-scale business sector, discipline in the application of basic inventory management principles is enough to have a noticeable impact on performance.

In the manufacturing sector in Kenya, research underscores the importance of inventory control of raw materials and finished goods. Integration between inventory systems and production schedules is the key to efficiency. Companies that implement integrated information systems are better able to respond to fluctuations in market demand and avoid production delays [3]. These results show that in a sector that relies on production continuity, timely inventory planning is crucial to smooth business processes and customer satisfaction.

A statistical analysis-based study in Uganda also confirmed the importance of information systems in inventory management. Using a quantitative approach, it was found that technology-based inventory management systems significantly improve operational efficiency and decision-making effectiveness. In this context, the speed and accuracy of information is the key to successful inventory management that has a direct impact on organizational performance [5].

Studies in the mining sector in Zimbabwe show a different approach. In this sector, strict control of inventory, especially high-value items such as spare parts for heavy equipment, is a top priority. The use of an information technology-based control system helps reduce the risk of lost goods, theft, and waste due to expired stock. The result is improved planning accuracy, cost efficiency, and overall financial control of the company.

Table 3. Key Comparative Themes Across Studies

No.	Aspects	Found
1.	Control System	The importance of robust systems to reduce waste and risk
2.	Accurate Recording	Consistent need for accurate inventory logs
3.	Requirements Planning	Timely planning improves forecasting and efficiency.
4.	Managerial Knowledge	Strongly mediates the impact of practices on performance

Based on the analysis across the five selected articles, several recurring themes emerge that underline the critical role of control systems, accurate inventory recording, and timely planning of stock requirements in enhancing organizational performance. These commonalities suggest that regardless of industry or country, these foundational elements are essential for effective inventory management. However, differences become apparent when viewed through the lens of industry characteristics and the organization's capacity to adopt and integrate technological tools into their inventory systems.

Table 4. Differences Identified Based on Context

No.	Aspects	Differences Found
1.	Industry Sector	The main focus is different: retail and micro business on practical management, manufacturing and mining on system integration and tight control.
2.	Technology Readiness	Countries with advanced technology infrastructure (Kenya, Indonesia) are better able to utilize real-time data-driven systems. In countries with limited technology (Ethiopia), success relies more on operational discipline.
3.	Human Capital Role	Managerial competence was a key success factor across all contexts but especially crucial in places with limited automation.

In examining the contextual differences presented in the five articles, it becomes evident that the application of inventory management varies significantly depending on industry focus and technological infrastructure. In sectors such as retail and microenterprises, the emphasis lies more on practical, low-cost inventory practices, while industries like manufacturing and mining demand tighter control and integration with production systems. Furthermore, organizations operating in countries with advanced technological readiness, such as Kenya and Indonesia, demonstrate greater ability to utilize real-time, data-driven inventory tools. In contrast, firms in regions with limited technological infrastructure, like Ethiopia, rely heavily on manual systems and operational discipline. These differences illustrate that inventory management strategies must be tailored to both the nature of the business and the technological environment in which it operates.

These findings align with research by Panigrahi et al. (2024), who found that inventory management significantly affects SME performance when combined with managerial decision-making. Similarly, Pai & Hungund (2025) confirm that inventory systems alone are insufficient without the intervention of skilled staff to interpret stock data and take appropriate action. Other studies Ali et al. (2024) also highlight that digital tools enhance performance only when supported by clear data governance and forecasting frameworks. This supports the argument that technology and human capability must co-exist to achieve optimal results in inventory performance.

4. CONCLUSION

Based on the analysis of five scientific journals from various developing countries, it can be concluded that inventory management practices have a consistent and positive influence on organizational performance. The comparative review confirms that well-managed inventory contributes to operational efficiency, cost reduction, and improved responsiveness to market needs. This directly answers the research question regarding whether and how inventory management affects organizational performance across different contexts.

The findings reveal that this impact is not only determined by the presence of control systems or inventory procedures, but also significantly strengthened by the managerial knowledge of inventory personnel. This knowledge allows organizations to better anticipate demand, allocate resources efficiently, and reduce operational risks associated with stockouts or overstock. Furthermore, across countries such as Indonesia, Ethiopia, Kenya, Zimbabwe, and Uganda, the study highlights that different sectors retail, manufacturing,

mining, and small businesses benefit from inventory management, though the specific methods and tools vary based on technological readiness and organizational maturity.

In practical terms, this study emphasizes the need for ongoing training and competency development for inventory managers. Additionally, the integration of information systems and the use of data-driven decision-making tools play a critical role in creating inventory systems that are responsive, flexible, and aligned with business objectives. With a holistic and evidence-based approach, inventory management can serve as a strategic lever to improve organizational competitiveness, adaptability, and long-term sustainability.

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