
Assessing the Relationship Between Inventory Accounting Information Systems and Operational Efficiency in Bandung's Manufacturing Firms

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ABSTRACT

This research addresses the main issue of how the Inventory Accounting Information System impacts the Internal Control of inventory in manufacturing companies in Bandung. The primary objective is to determine the influence of this accounting system on inventory control. The study employs a comprehensive descriptive and verificative method, focusing on manufacturing companies in Bandung. Data collection involves secondary data and hypothesis testing using linear regression analysis to provide a comprehensive understanding of the relationship between the Inventory Accounting Information System and Internal Control of inventory. The findings reveal a linear regression equation indicating a strong positive influence of the accounting system on internal control. Specifically, the Inventory Accounting Information System contributes significantly to the Internal Control of inventory in manufacturing companies, while the remaining influence is attributed to other unexamined variables. This research offers a novel insight into the critical role of effective inventory accounting systems in enhancing internal controls. The implications of these results highlight the necessity for manufacturing firms to optimize their inventory accounting practices to improve overall internal control.

Keywords: Inventory Accounting Information System, Internal Control of Inventory.

INTRODUCTION

Inventory acts as a critical asset that is highly susceptible to damage, theft, and depreciation in market value, making diligent oversight essential. Poor management of inventory can result in substantial financial losses for a company. As a vital component influencing production quality, inventory management requires significant attention from organizations. This asset is particularly vulnerable to factors such as time

decay, market price fluctuations, damage, and unnecessary costs stemming from improper handling. Ensuring effective inventory management is crucial for maintaining smooth operational processes.

Polenghi et al. (2022) emphasize that information plays a pivotal role in enhancing industrial asset management, which is vital for optimizing inventory practices. Additionally, Panigrahi et al. (2024) demonstrate that effective inventory

management positively impacts the performance of small and medium enterprises. These findings highlight the necessity for companies to implement robust inventory management strategies to mitigate risks and improve overall operational efficiency. By prioritizing inventory oversight, organizations can safeguard their assets and enhance production quality, ultimately contributing to their long-term success.

The inventory accounting information system at a manufacture company in Bandung is currently suboptimal, likely due to occasional system errors that cause delays in work. Additionally, many inventory items are lost because of insufficient employee monitoring and inadequate maintenance and oversight of the inventory. The recording system in the warehouse is also ineffective due to poor communication, which leads to [specific impacts of poor communication]. Inventory is a crucial asset for the company, as a significant portion of its wealth is tied up in inventory. If efficiency and effectiveness are not improved, this will negatively impact pricing and quality, ultimately affecting the company's financial reports.

Various risks arise from inventory management, including issues related to company policies for asset management and procedures for both incoming and outgoing goods. Delays in reporting, inaccuracies in inventory counts, incomplete supporting reports, and unavailability of information when needed contribute to poor-

quality inventory information. To mitigate these risks and improve the quality of inventory data, it is crucial to address the factors that contribute to these issues. Rabinovich et al. (2003) highlight the importance of operational processes and information systems on inventory performance, while Chan and Prakash (2012) emphasize the significance of effective inventory management in collaborative manufacturing environments. These insights underscore the need for improved systems and practices to enhance inventory management.

The primary objective of internal control is to safeguard assets and ensure accurate inventory recording in financial reports, highlighting the necessity for effective internal control over inventory. An internal control system for inventory can be deemed effective if it meets the essential elements of internal control and achieves its own objectives, which include the reliability of inventory reports, compliance with relevant policies and procedures, and the effectiveness and efficiency of inventory operations (COSO as cited in Fauzan, 2003). Given the issues outlined, this research aims to examine the Inventory Accounting System and enhance Internal Control over Inventory at a manufacturing company in Bandung, providing valuable insights for professionals in accounting, finance, and internal control.

Houcine et al. (2022) discuss the impact of corporate governance on financial reporting

quality, which is relevant to understanding how internal controls can influence asset management. Additionally, Abdo et al. (2022) explore the role of emotional intelligence in internal control effectiveness, emphasizing the human factors that contribute to successful inventory management. These studies underscore the importance of robust internal control systems in ensuring accurate inventory management and financial reporting.

RESEARCH METHODS

This study adopts a quantitative research method with an associative analysis framework. Quantitative research is grounded in positivist philosophy, focusing on specific populations or samples. Data collection is conducted using research instruments, and the analysis is statistical, aimed at testing predefined hypotheses (Sugiono, 2019). Research Objects: The primary focus of this research is the Inventory Accounting Information System and its relationship with Internal Control in manufacturing companies situated in Bandung. Data Collection: Data will be collected through structured questionnaires distributed to key personnel within the selected manufacturing firms. This approach ensures that the gathered data is relevant to the operational dynamics of inventory accounting systems and the effectiveness of internal controls. Data Quality Testing: Validity Test: This test assesses whether the data collected is valid. The

validity will be determined using the questionnaire as the measurement instrument, ensuring that it accurately reflects the constructs being studied. Reliability Test: The reliability of the research instruments will be evaluated using Cronbach's Alpha coefficient. This will help confirm the consistency and stability of the responses obtained from the questionnaires. Data Analysis Techniques: The analysis will employ path analysis to explore the relationships between the Inventory Accounting Information System and Internal Control. Path analysis will facilitate the understanding of both direct and indirect effects among the variables, offering insights into how the accounting system impacts the effectiveness of internal controls in the manufacturing sector. Additionally, this method will allow for a comprehensive examination of how various factors interact and contribute to overall operational efficiency. Furthermore, the findings from this analysis will provide valuable recommendations for enhancing inventory management practices and internal control systems within the manufacturing companies studied.

RESULT AND DISCUSSION

The findings from the data quality tests provide significant insights into the validity and reliability of the research instruments used. For the validity assessment, the scores for variable X, which range from 0.584 to 0.808, and for variable Y,

which range from 0.506 to 0.878, indicate that all measurement items surpass the minimum validity threshold of 0.300. This confirms that each item effectively measures the intended constructs, ensuring that the data collected is meaningful and relevant to the research objectives. In terms of reliability, the results show that both variables X and Y have scores of 0.953 and 0.955, respectively. These high values indicate that all variables are classified as reliable, as they exceed the acceptable reliability benchmark of 0.700. This suggests that the instruments used in the study produce consistent results across different instances of measurement. Overall, the instruments employed in this research are deemed reliable and robust. They exhibit a strong level of stability, meaning that if the measurements were to be repeated, the outcomes would remain consistent. This reliability enhances the credibility of the research findings and supports the assertion that the instruments are effective tools for accurately measuring the constructs of interest. Thus, the study can confidently draw conclusions based on the data collected.

The research highlights the significant connection between inventory accounting information systems and operational efficiency. Effective inventory management is crucial for businesses, as it directly impacts their ability to operate smoothly and meet customer demands. When companies implement robust accounting

information systems, they can track inventory levels accurately and make informed decisions. Puspitawati et al. (2024) emphasize that strategic management accounting and integrated management accounting information systems play a vital role in enhancing inventory efficiency. By utilizing these systems, organizations can streamline their processes, reduce waste, and optimize resource allocation. (Fadillah et al., 2025; Putra et al., 2023) This leads to improved operational performance. The research delves into the relationship between inventory accounting information systems and operational efficiency, particularly in the context of modern industrial practices. Thuan et al. (2022) identify key factors influencing the use of accounting information systems that enhance operational efficiency in the era of Industry 4.0. They argue that as businesses adopt advanced technologies, the integration of these systems becomes crucial for optimizing inventory management and overall operations. Furthermore, BENTALEB and Mounaim (2023) explore how integrating information systems impacts cost efficiency, inventory control, and timeliness within the citrus supply chain. Their findings highlight that effective system integration allows companies to manage their inventory more accurately, which reduces costs and improves the speed of operations. This integration leads to better decision-making and responsiveness to market demands.

Siagian (2024) further supports this notion by demonstrating how implementing accounting information systems can positively affect a company's operational efficiency. When businesses have access to timely and accurate data, they can respond quickly to changes in the market and adjust their inventory accordingly. Moreover, Astuty et al. (2023) explore the quality of accounting information as a mediator between management accounting practices and inventory management. Their findings suggest that high-quality information enhances decision-making, which ultimately leads to better inventory control and operational outcomes.

Lastly, Rahwani et al. (2023) discuss the integration of inventory applications within accounting information systems as a way to boost efficiency. By leveraging technology, companies can automate processes, reduce human error, and improve overall productivity. The research indicates that effective inventory accounting information systems are essential for achieving operational efficiency. By adopting strategic approaches and utilizing advanced technologies, organizations can enhance their inventory management practices and drive better performance.

CONCLUSION

In conclusion, the research findings indicate that the procedures for using the inventory accounting information system facilitate employees,

achieving an average score of 3.14, categorized as 'Fairly Good.' Additionally, the presentation of information related to inventory is structured, resulting in an average score of 3.20, also categorized as 'Fairly Good.' The data analysis reveals a coefficient of determination (R Square) of 0.757, suggesting that the inventory accounting information system influences internal control over inventory by 75.7%. This significant influence underscores the importance of the inventory accounting information system in maintaining efficient inventory control. This leaves 24.3% of the influence attributed to other factors not examined in this study.

However, the research has limitations. It did not explore the additional factors that may affect internal control over inventory beyond the accounting information system. Future research should investigate these unexplored variables to provide a more comprehensive understanding of the factors influencing internal control.

To enhance the effectiveness of the inventory accounting information system, it is essential to improve the planning procedures for inventory checks and production processes. This will streamline warehouse operations. Companies should ensure that information presentation and communication are accessible, timely, and accurate by conducting regular stock checks and maintaining accurate and up-to-date records of inventory. Furthermore, to strengthen the role of the inventory accounting information system in

internal control, companies should implement routine supervision. This not only fosters a healthy work environment but also minimizes the risk of undesirable incidents, such as fraud and misconduct, which can harm the organization's reputation and financial stability.

REFERENCES

- Abdo, M., Feghali, K., & Zgheib, M. A. (2022). The role of emotional intelligence and personality on the overall internal control effectiveness: applied on internal audit team member's behavior in Lebanese companies. *Asian Journal of Accounting Research*, 7(2), 195-207.
- Astuty, W., Effendi, I., Habibie, A., & Pasaribu, F. (2023). A Comprehensive Study of Accounting Information Quality as a Mediator Between Management Accounting Practices and Inventory Management in Operations Research for Manufacturing Companies in Indonesia. *Operational Research in Engineering Sciences: Theory and Applications*, 6(2).
- BENTALEB, F. Z., & Mounaim, T. A. K. I. (2023). Operational Impact of Information System Integration on Cost Efficiency, Inventory Control, and Timeliness in Citrus Supply Chain Dynamics. *International Journal of Accounting Finance Auditing Management and Economics*, 4(6-2), 671-687.
- Chan, F. T., & Prakash, A. (2012). Inventory management in a lateral collaborative manufacturing supply chain: a simulation study. *International Journal of Production Research*, 50(16), 4670-4685.
- Houcine, A., Zitouni, M., & Srairi, S. (2022). The impact of corporate governance and IFRS on the relationship between financial reporting quality and investment efficiency in a continental accounting system. *EuroMed Journal of Business*, 17(2), 246-269.
- Fadillah, A. H., Damayanti, I., Tansar, I. A., & Jatmika, L. (2025). The Influence of the Finished Goods Inventory Accounting Information System on Internal Control of Finished Goods Inventory: Study Of One of The Companies Providing Explosives and Mining Blasting Services in Indonesia. *Majalah Bisnis & IPTEK*, 18(1), 36-47. <https://doi.org/10.55208/2zet4r05>
- Panigrahi, R. R., Shrivastava, A. K., & Nudurupati, S. S. (2024). Impact of inventory management on SME performance: a systematic review. *International journal of productivity and performance management*, 73(9), 2901-2925.
- Polenghi, A., Roda, I., Macchi, M., & Pozzetti, A. (2022). Information as a key dimension to develop industrial asset management in manufacturing. *Journal of Quality in Maintenance Engineering*, 28(3), 567-583.
- Puspitawati, L., Lhutfi, I., & Qudratov, I. (2024).

Enhancing inventory efficiency: The role of strategic management accounting and integrated management accounting information systems. *Cogent Business & Management*, 11(1), 2429801.

Putra, L. A. B. H., Komara, A. T., Sidharta, I., Roslina, N. Y., & Megawati, I. (2023). Information Control on Inventory Study at In One of The Garment Companies in Bandung. *Informatics Management, Engineering and Information System Journal*, 1(1), 66-76.

Rabinovich, E., Dresner, M. E., & Evers, P. T. (2003). Assessing the effects of operational processes and information systems on inventory performance. *Journal of Operations Management*, 21(1), 63-80.

Rahwani, N. R., Sadewa, M. M., Nikmah, N., Mukhlisah, N., & Iriawan, S. (2023). Boosting efficiency: Integrating inventory apps in accounting information systems. *Indonesian Journal of Applied Accounting and Finance*, 3(2), 153-166.

Siagian, G. A. J. (2024). The effect of implementing accounting information systems on company operational efficiency. *The American Journal of Interdisciplinary Innovations and Research*, 36-45.

Thuan, P. Q., Khuong, N. V., Anh, N. D. C., Hanh, N. T. X., Thi, V. H. A., Tram, T. N. B., & Han, C. G. (2022). The determinants of the usage of accounting information systems toward operational efficiency in industrial revolution

4.0: Evidence from an emerging economy. *Economies*, 10(4), 83.



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