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Evaluate the Effectiveness of the Inventory Accounting Information System in Supporting Internal Control

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ABSTRACT

Purpose: This study aims to evaluate the effectiveness of the inventory accounting information system in supporting internal controls at PT Harapan Indah, which still uses manual and semi-computerized systems.
Research Method: This study employed a qualitative descriptive case study design. Data were collected through interviews, observations, and documentation from five informants, including members of the accounting and financial management departments and warehouse staff. Data analysis was conducted through data reduction, thematic coding, data presentation, and the drawing of conclusions using the COSO Internal Control Integrated Framework and the Information System Success Model.
Results and Discussion: The research findings indicate that the inventory accounting information system has supported the company's operational activities; however, its effectiveness in supporting internal controls remains moderate. Key weaknesses include a lack of system integration, access restrictions, audit trails, and documented risk assessment procedures.
Implications: This study underscores the importance of integrating digital systems and strengthening risk-based internal controls.
Originality: The novelty of this research lies in integrating the COSO framework and the Information System Success Model in the context of semi-computerized systems.

Keywords: accounting information systems; inventory; internal control; COSO; information system effectiveness.

1. Introduction

Rapid global economic development requires companies in the trading sector to strengthen their accounting information systems to provide accurate, timely, and relevant financial and operational data. According to Romney and Steinbart (2020), accounting information systems serve as the backbone for providing information that supports managerial decision-making. In the trading industry, which has a high transaction frequency, an effective accounting information system is a key factor in maintaining operational efficiency and data integrity. Trading companies manage thousands of purchase and sales transactions every month, thus requiring an accounting information system capable of ensuring accurate and timely reporting. According to Hall (2021), non-integrated systems can increase the risk of recording errors and reporting delays. Therefore, the effectiveness of the accounting information system determines a company's success in maintaining the reliability of financial reports and preventing potential fraud.

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One critical aspect of the accounting information system is inventory management. Inventory is a primary component of current assets and a key factor in operational efficiency and the company's profit margin. PSAK 202 on inventory stipulates that every entity must present inventory at cost or net realizable value, whichever is lower. Accurate and systematically documented inventory data management is a vital component in supporting the quality of business information and data-driven operational decision-making (Baottong et al., 2025). This requirement indicates that inventory accounting must reflect the company's actual conditions, so its recording system must be conducted systematically and well-documented. The obligation to implement a reliable recording system is based not only on PSAK but also on the Financial Services Authority (OJK) Regulation No. 29/POJK.04/2016, which requires companies to implement adequate internal control systems to ensure the reliability of financial reporting. This regulation emphasizes that the effectiveness of the accounting information system is a critical tool in fulfilling the principles of good corporate governance (GCG).

The lack of system integration at PT Harapan Indah poses challenges, including limited transaction authorization, weak interdepartmental integration, and potential data manipulation. According to Putri and Sari (2022), companies that still use semi-automated systems face recording errors that are up to 35% higher than those of companies that have implemented ERP-based systems. This highlights the urgency of improving the effectiveness of the information systems in use. Evaluating the effectiveness of an accounting information system involves assessing not only the technical aspects of the software but also organizational structure, human resource competencies, and authorization and reporting mechanisms. Susanto (2021) states that an accounting information system is effective only if it produces information that is relevant, reliable, timely, and verifiable. Therefore, this study assesses the extent to which the manual-semi-computerized system at PT Harapan Indah has met these effectiveness criteria. In practice, many trading companies face discrepancies between system records and physical inventory counts during stock takings. According to Hery (2020), such discrepancies often arise from weak recording procedures and inadequate oversight of goods-in and goods-out transactions. This situation requires companies to conduct a comprehensive evaluation of the reliability of their accounting information systems. In addition to internal factors, the effectiveness of accounting information systems is influenced by external regulations that require transparency and accountability in financial reporting. Law No. 40 of 2007 on Limited Liability Companies stipulates that the board of directors is responsible for reliable accounting control and recording systems. Thus, the use of an effective accounting information system is not only a managerial necessity but also a legal obligation.

Previous research by Fadillah and Supriatna (2022) indicates that an inventory accounting information system supported by robust internal controls can reduce the risk of fraud by up to 40%. However, that study did not integrate a COSO framework-based evaluative approach with the perspective of information system success, nor did it specifically examine how the weaknesses of non-integrated systems directly affect the effectiveness of internal controls. Therefore, a research gap remains, particularly regarding the effectiveness of accounting information systems in companies still undergoing a technological transition. Based on this gap, this study aims not only to assess the effectiveness of the inventory accounting information system at PT Harapan Indah but also to analyze how the characteristics of non-integrated systems influence the quality of the company's internal controls. The uniqueness of this study lies in its integrative approach, combining the COSO Internal Control Framework and the Information System Success Model to evaluate accounting information systems within a transitional company. This approach enables a more comprehensive analysis, not only

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of the system's technical aspects but also of control, risk, and organizational behavior. Thus, this study is expected to make a theoretical contribution to the literature on accounting information systems and internal control, as well as a practical contribution in the form of strategic recommendations for companies undergoing system transformation.

The remainder of this paper is organized as follows. Section 2 provides a literature review and hypothesis development. Section 3 presents the research method and design. Section 4 provides a discussion. Section 5 is Concluding Remarks and Recommendations.

2. Literature Review and Hypothesis Development

According to Mulyadi (2017), an accounting information system is a set of procedures for collecting, recording, and reporting data on economic transactions. This system is designed to generate information relevant to management in controlling the company's operations. At PT Harapan Indah, the accounting information system is still dominated by manual recording and non-integrated spreadsheets, which can lead to reporting delays and inaccuracies in inventory balance calculations. The effectiveness of the accounting information system is also closely linked to the company's internal controls. The COSO Internal Control Integrated Framework (2017) emphasizes that a robust internal control system is based on five key components: control environment, risk assessment, control activities, information and communication, and monitoring. The use of COSO as an evaluation framework is based on its relevance to the Standards of Professional Practice for Public Accountants (SPAP) – SA 315 (IAI, 2021), which emphasizes the assessment of the design and implementation of internal controls, including those over inventory accounting information systems.

Other models cannot replace COSO as an evaluation framework, as it is the official guideline in the Standards of Professional Practice for Public Accountants (SPAP) – SA 315 (IAI, 2021) for assessing the risk of material misstatement. SA 315 requires auditors to assess the design and implementation of internal controls, including the inventory accounting information system. Thus, assessing the effectiveness of accounting information systems through the COSO framework has a strong normative and professional basis. In addition to COSO, Merchant & Van der Stede's (2007) control systems theory explains that management control systems are designed to ensure that company activities align with the organization's strategic objectives. The implementation of an effective accounting information system serves as a formal control tool that can minimize information asymmetry between management and company owners. This is crucial in trading companies such as PT Harapan Indah, where high transaction volumes can potentially lead to information discrepancies between departments.

Poorly managed inventory can pose risks of loss, damage, and waste of working capital. According to Ristono (2020), an effective inventory control system helps companies avoid excess or stock shortages that could disrupt operational smoothness. Haeruddin (2023) explains that the effectiveness of inventory management and turnover plays a vital role in maintaining operational stability and supporting the efficiency of trading company activities. An evaluation of the effectiveness of the inventory accounting information system is necessary to ensure that all activities related to purchasing, storing, and selling goods are accurately recorded and traceable.

To ensure system reliability, this study draws on the Information System Success Model (DeLone & McLean, 2020), which assesses system effectiveness based on system quality, information quality, and user satisfaction. This theory is used to evaluate effectiveness dimensions from the perspective of

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internal users (warehouse, accounting, and management departments) to ensure a comprehensive evaluation. In addition to assessing technical effectiveness, this study also considers aspects of human–technology interaction. According to Laudon and Laudon (2022), information systems cannot function effectively without the support of organizational behavior and a work culture that fosters transparency. Therefore, this study views the effectiveness of accounting information systems not merely as a technological issue but also as part of the organization's control strategy. Based on these theoretical and regulatory foundations, this study is relevant for trading companies still in the transition phase from manual to digital systems. However, research specifically evaluating the effectiveness of accounting information systems in companies that still use a combination of manual and semi-computerized systems remains very limited, particularly studies that comprehensively examine the relationship between system effectiveness and the quality of internal controls. Most previous studies have focused on organizations that have adopted ERP-based or integrated systems, thereby failing to provide an adequate empirical picture of the risks and weaknesses of such systems during the transitional phase.

3. Research Method

This study employs a qualitative descriptive approach to evaluate the effectiveness of the inventory accounting information system in supporting internal controls at PT Harapan Indah. The qualitative approach was chosen because this study seeks to understand the phenomenon of information systems from the perspective of users and the processes occurring within the organization, rather than merely measuring variables statistically. According to Creswell (2018), a qualitative approach is suitable for examining processes, meanings, and individuals' subjective experiences within a social system. The research design employed is a case study. This approach allows the researcher to explore phenomena in depth through various data sources within a real-world context. According to Yin (2018), case studies are effective when the boundaries between the phenomenon under study and its context are not yet clear. In the context of this research, the boundaries among the accounting information system, user behavior, and internal control mechanisms are interrelated, necessitating in-depth analysis.

The research was conducted at PT Harapan Indah, a trading company engaged in the distribution of household goods. This location was selected based on the company's characteristic of still using a manual, semi-computerized inventory management system. This situation provides an opportunity to assess the extent to which the existing accounting information system has supported internal controls. The research was conducted over three months, from November 2025 to January 2026, encompassing observation, interviews, document analysis, and the preparation of the research report. This timeframe was chosen to allow for in-depth and repeated data collection to ensure accurate and valid results.

Data sources in this study are categorized as primary and secondary. Primary data were obtained through in-depth interviews with five key informants: the head of the accounting department, the finance manager, and three warehouse staff members directly involved in inventory management. Meanwhile, secondary data was obtained from internal company documents, including inventory reports, stock cards, purchase and sales documents, and accounting policies and procedures.

Data collection was conducted through three main methods: interviews, observations, and document review. Interviews lasted an average of 30–60 minutes per informant and used an interview guide developed from indicators of information system effectiveness and COSO internal control

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components. Observations were conducted directly on transaction recording processes, inventory document workflows, and authorization mechanisms within the company using structured observation sheets. Document review was used to verify the alignment between field practices and written procedures. According to Sugiyono (2019), the combination of these three techniques enhances data accuracy and strengthens the research's validity.

Research informants were selected using purposive sampling, which involves choosing respondents based on their positions and involvement in the inventory system. The study included 5 informants selected purposively based on their strategic roles within the inventory information system. According to Sekaran & Bougie (2020), purposive sampling is effective in qualitative research that prioritizes depth of understanding over statistical representativeness.

Data analysis in this study employs the interactive model by Miles, Huberman, and Saldaña (2018), comprising three stages: data reduction, data presentation, and conclusion drawing. Data reduction is conducted to select information relevant to the research objectives. Data presentation is carried out using matrices, tables, and thematic narratives. The data analysis process was carried out through coding stages, including open coding to identify initial themes, axial coding to group categories, and selective coding to establish relationships between themes relevant to the effectiveness of information systems and internal controls. In evaluating the effectiveness of the accounting information system, this study refers to the COSO Internal Control - Integrated Framework (2017) to assess internal control components and the Information System Success Model (DeLone & McLean, 2020) to assess system quality and user satisfaction. The use of these two models provides a balance between control aspects and the effectiveness of the information system. To ensure data validity, source and method triangulation techniques were employed. According to Creswell (2018), triangulation involves comparing interview results across informants, field observation findings, and company documents to ensure data consistency and validity. Additionally, the researcher conducted member checking by confirming interpretation results with informants to prevent misinterpretation of data.

The analysis results will be presented narratively and descriptively, supported by evaluation tables of the accounting information system's effectiveness based on internal control components and information effectiveness criteria. This approach allows readers to understand the relationship between system design, implementation, and their impact on the company's internal control effectiveness. A multi-layered validation process, including on-site observations, cross-informant confirmation, and comparisons with theory and prior research, supports the reliability of the research findings. Thus, this study not only produces an empirical evaluation but also strengthens the theoretical foundation regarding the relationship between accounting information systems and internal control.

The qualitative descriptive approach also allows the researcher to highlight aspects of user behavior and organizational culture that influence the system's effectiveness. This aligns with Laudon and Laudon's (2022) view that information systems are a combination of technology, people, and procedures, so their success is determined by the synergy of all three. All data obtained were analyzed in accordance with the principles of research objectivity and integrity. The researcher ensured that the interpretation process was based on empirical facts rather than personal perceptions. Additionally, the confidentiality of all primary data was maintained in accordance with research ethics and company permissions. This research methodology was designed to provide an in-depth understanding of the effectiveness of the inventory accounting information system in supporting internal control at PT Harapan Indah. Through a combination of qualitative approaches, a robust theoretical framework, and

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rigorous validation procedures, the research findings are expected to make a tangible contribution to the development of accounting practices and internal control systems in trading companies in Indonesia.

4. Results and Discussion

4.1 Analysis Results

PT Harapan Indah is a company engaged in the trading and distribution of household goods. The company purchases goods from suppliers, stores them in warehouses, and distributes them to both retail and wholesale customers. In its operations, inventory is a key asset with a high turnover rate, requiring an accurate and well-controlled recording system. The inventory accounting information system currently in use is still manual and semi-computerized. Based on field observations, purchase and sales transactions are still recorded on physical documents, such as invoices and delivery notes, which are then re-entered into spreadsheets by the administrative department. This situation indicates that the recording process is not yet integrated in real-time between the warehouse and accounting departments.

4.1.1 Current Inventory Accounting Information System

The inventory accounting information system at PT Harapan Indah is still manual and semi-computerized, relying primarily on physical documents and spreadsheet applications for record-keeping. The inventory management process begins with the purchase of goods from suppliers. Each goods receipt is accompanied by supporting documents, such as purchase invoices and delivery notes, which the warehouse department first verifies. After checking the quantity and condition of the goods, the warehouse department manually records the received quantity on the receipt document. Subsequently, this receipt data is forwarded to the administration department for compilation into a spreadsheet that serves as an inventory card. This spreadsheet contains information regarding the transaction date, item code, quantity received, quantity issued, and the ending inventory balance. However, data updates in the system are not performed in real time but rather based on periodic summaries prepared by administrative staff. This situation results in a time lag between physical transactions in the warehouse and their recording in the system. Interviews with administrative staff revealed that the inventory data update process often experiences delays because entries are made only after physical documents are received from the warehouse. One informant stated that:

> *"Inventory data is usually only compiled after all the documents have been gathered, so there is sometimes a time lag between when goods are shipped and when they are recorded in the spreadsheet."* **(Administrative Informant, 2026)**.

When a sales transaction occurs, the sales department issues a goods requisition form to the warehouse. Based on this document, warehouse staff release the goods as requested and record the stock reduction on a manual stock card. Afterward, the sales document is returned to the administration department so that the stock reduction can be entered into a spreadsheet. Thus, every goods-out transaction goes through two recording stages: manual recording in the warehouse and digital recording in a spreadsheet.

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From an internal control perspective, the company has implemented a separation of duties between the warehouse and administrative departments, thereby establishing a system of checks and balances in the recording process. However, the system is not yet equipped with technology-based access controls. Spreadsheet files can be accessed and edited by multiple users without adequate audit trail functionality. This creates the risk of data alterations without a clear audit trail. This situation indicates that access controls remain weak, as multiple users can edit spreadsheets without an adequate audit trail. This finding aligns with Hall (2021), who states that systems lacking access controls and audit trails are at increased risk of unauthorized data changes. In the context of PT Harapan Indah, this weakness causes control functions to rely more on individual integrity than on technology-based system controls. Additionally, the transaction authorization process still relies on manual signatures on physical documents. There is no password-based authorization system or electronic approval system capable of restricting access according to authority levels. This situation indicates that controls rely more on trust and administrative procedures than on structured system controls.

The company also conducts periodic physical inventory counts every three months to reconcile physical balances with those recorded in spreadsheets. If discrepancies are found, manual adjustments are made via correction journals. Although this procedure includes a monitoring mechanism, the frequency of physical inventory counts—every three months—poses the risk that inventory discrepancies will accumulate before being detected. From an internal control perspective, this situation increases the risk of delayed corrections and reduces the reliability of the inventory information management uses to make operational decisions. Overall, the existing inventory accounting information system has supported the company's basic operational needs. However, reliance on manual recording and periodic reconciliation processes means the system is not yet fully effective in providing accurate, timely, and reliable information to support optimal internal control. The lack of system integration, automated validation, and technology-based access controls is the main factor limiting the system's effectiveness in minimizing the risk of recording errors and potential discrepancies.

4.1.2 Evaluation Based on the COSO Internal Control Framework

Table 1. Evaluation of Internal Control Based on COSO Components

COSO Components	The Situation at PT Harapan Indah	Findings	Effectiveness Rate
Control Environment	The organizational structure separates the warehouse, administrative, and financial functions.	There are currently no written standard operating procedures (SOPs) or formal policies regarding the inventory management system (SIA)	Quite Effective
Risk Assessment	Management is aware of the risk of inventory discrepancies	There is no formal documentation of risk identification	Less Effective
Control Activities	There is manual authorization and a quarterly inventory count	Spreadsheets can be edited without access restrictions	Quite Effective
Information & Communication	Inventory reports are prepared monthly.	Not real-time and relies on manual input	Quite Effective
Monitoring	Physical reconciliation and recording were performed	There is no audit trail system	Less Effective

Source: *Data compiled by the researcher (2026)*

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The assessment of the effectiveness of each COSO component is based on triangulation of interviews, observations, and documentation. The "Effective" category is assigned if most control indicators have been consistently implemented and are supported by system-based controls. The "Sufficiently Effective" category is assigned if controls are in place but still have administrative or technological weaknesses that could potentially pose risks. Meanwhile, the "Less Effective" category is assigned if significant weaknesses are found that prevent control functions from operating optimally. Category determination is conducted through a thematic coding process of field findings based on the COSO Internal Control Framework (2017) indicators.

Based on the evaluation results in Table 1, PT Harapan Indah's internal control system indicates that the basic control structure is in place; however, its effectiveness is not yet fully optimized, as it still relies on manual processes and is not yet supported by system-based controls.

- *Control Environment*
  The control environment component indicates that the company has implemented a separation of duties between the warehouse, administrative, and finance departments. This separation is an application of the segregation of duties principle, which aims to reduce the risk of fraud and recording errors. However, the absence of written SOPs and formal policies for the inventory accounting information system suggests that controls remain operational rather than administratively structured. Within the COSO framework, the control environment serves as the foundation for all other components. The absence of formal documentation can lead to procedural inconsistencies during personnel changes or increases in transaction volume. Therefore, although deemed sufficiently effective, this component still requires strengthening through the standardization of written procedures.

- *Risk Assessment*
  The risk assessment component was deemed ineffective because, although management was aware of the risk of inventory discrepancies, there was no formal documentation to identify and evaluate these risks. Risks were managed based on experience and situational responses rather than through a systematic approach, such as developing a risk matrix. Interview results with the finance manager indicate that the company does not yet have formal documentation regarding inventory risk mapping. This statement is supported by an examination of company documents, which do not reveal a risk matrix or written risk evaluation procedures. According to COSO, organizations are required to identify and analyze risks relevant to achieving operational and reporting objectives. This situation indicates that the risk management process remains reactive. From a COSO perspective, weaknesses in risk identification can delay the organization's detection of potential irregularities, particularly in inventory systems with high transaction volumes. This condition is one of the primary weaknesses in the company's internal control system.

- *Control Activities*
  Control activities at PT Harapan Indah have been implemented through manual authorization mechanisms and quarterly physical inventory counts. This indicates control efforts aimed at ensuring the accuracy of inventory records. However, using spreadsheets without access restrictions creates a control gap, as data can be altered without a clear audit trail. From a COSO perspective, control activities should include preventive and detective controls integrated with the information system. Reliance on manual controls makes control effectiveness highly dependent on individual

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integrity. Therefore, although considered reasonably effective, this component is not yet fully capable of minimizing the risk of data manipulation.

- *Information and Communication*
  The information and communication component indicates that the company has produced monthly inventory reports to support management decision-making. The information presented is relatively relevant and can be used to monitor inventory availability. However, because data updates are performed periodically rather than in real time, there is a potential for information delays. Within the COSO framework, effective information must be accurate, timely, and accessible to authorized parties. Reliance on manual input means the system is not yet capable of providing reliable, prompt information. Therefore, this component is considered reasonably effective but requires improved system integration.

- *Monitoring*
  The monitoring component indicates that physical reconciliation is conducted through inventory counts and the comparison of physical balances with administrative records. However, the company does not yet have an audit trail system capable of automatically detecting data changes. The monitoring process is still performed manually and periodically. According to COSO, effective monitoring must be conducted continuously and supported by a system capable of quickly detecting discrepancies. The absence of an audit trail makes it difficult for the company to trace data changes in the event of inventory discrepancies or recording errors. Based on system observations, changes to spreadsheets do not leave a record of the user or the time the data was changed. This situation weakens the monitoring function because oversight becomes corrective rather than preventive. Therefore, the monitoring component is deemed ineffective.

Overall, the evaluation indicates that PT Harapan Indah's internal control system is moderately effective. The control environment and control activities are in place, but have not yet been reinforced by formal documentation and technology-based controls. Risk assessment and monitoring are the weakest components because a systematic, integrated approach has not yet been implemented to support them. These findings indicate that the inventory accounting information system is not yet fully capable of optimally supporting internal controls. A transition to an integrated system with access restrictions, audit trails, and formal risk management would significantly improve the effectiveness of controls.

4.1.3 Evaluation Based on the Information System Success Model

The evaluation of the effectiveness of the inventory accounting information system, based on the Information System Success Model, was conducted by analyzing system quality, information quality, user satisfaction, and organizational impact. The assessment of effectiveness was based on the frequency of field findings, the consistency of interview results, observations, and documentation, and the extent to which the system supports the company's internal control functions. The "Less Effective" category is assigned when significant weaknesses are found that could compromise system reliability and internal controls. In contrast, the "Fairly Effective" category is assigned when the system supports basic operational activities but still has limitations in integration, timeliness, or risk mitigation.

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Table 2. Evaluation of the Effectiveness of the Inventory Accounting Information System

Dimensions	System Status	Impact on Internal Control	Effectiveness Rate
System Quality	Using spreadsheets without integration	Risk of input errors and lack of automatic validation	Less Effective
Quality of Information	Relevant but not real-time information	Inventory reports may be delayed	Quite Effective
User Satisfaction	Easy to use, but slow during peak traffic	The administrative burden is increasing	Quite Effective
Organizational Impact	Helping with basic decision-making	Risk mitigation is not yet optimal	Quite Effective

Source: *Data compiled by the researcher (2026)*

Based on the evaluation results in Table 2, the effectiveness of the inventory accounting information system at PT Harapan Indah indicates that the system has supported the company's operational activities but has not yet reached an optimal level in supporting comprehensive internal controls. The evaluation was conducted based on the four main dimensions of the Information System Success Model: system quality, information quality, user satisfaction, and organizational impact.

- *System Quality*
  The system's quality was deemed ineffective because it was still spreadsheet-based and lacked cross-departmental integration. Although spreadsheets are relatively flexible and easy to use, the system lacked automatic validation, access controls, and an audit trail. The absence of these system-based controls increased the risk of input errors and of data changes without clear documentation. Observations show that inventory spreadsheet files can be accessed by multiple users simultaneously without user-account-based authorization restrictions. Additionally, changes made in the spreadsheets do not leave a user activity history, making it difficult for the company to trace the source of changes when discrepancies arise in the records. One informant from the administration department stated that:

  > *"If there are changes to the data, they are usually edited directly in the same file, so it is not clear who made the changes or when they were made."* **(Administrative Informant, 2026).**

  Within the DeLone and McLean (2020) framework, system quality encompasses reliability, usability, flexibility, and security. The research findings indicate that flexibility and usability have been met, but security and internal controls are not yet functioning optimally. This situation indicates that the system functions more as an administrative recording tool than as an information system capable of supporting preventive internal controls. A system that is not integrated and lacks adequate access controls indicates that security and internal control requirements have not been met. This situation directly increases the risk of inventory recording errors.

- *Information Quality*
  The information quality dimension is considered quite effective because the information generated remains relevant and meets management's needs for monitoring inventory. Inventory reports

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provide a periodic overview of stock levels and support operational decision-making. However, the information presented is not yet real-time. Data updates that rely on manual input can lead to potential delays in information.

Based on the interview results, data updates are often delayed when transaction volumes increase or when the administrative department has not yet received the physical documents. One warehouse staff member noted that inventory information sometimes differs from the physical condition of the goods because administrative records are not updated immediately after a transaction. This finding indicates an information gap between operational activities and system recording.

In the context of internal control, these delays can hinder management's response to the risk of stock shortages or surpluses. This situation indicates that the information's quality does not yet fully meet the timeliness criteria outlined in the Information System Success Model. When inventory information is not updated promptly, operational decision-making may be based on inaccurate data. Thus, although the information is adequate in content, timeliness remains a weakness.

- *User Satisfaction*

From the users' perspective, the system is considered quite effective because it is easy to understand and does not require complex technical training. This indicates that the system is highly user-friendly. However, as transaction volumes increase, the manual recording process becomes slow and increases the administrative burden.

One warehouse staff member stated that the spreadsheet system was quite helpful for basic record-keeping, but the data entry process slowed down as the volume of transactions increased:

> *"When there are a lot of transactions, the recording process slows down because we have to enter them manually one by one."* **(Warehouse Staff, 2026)**

According to the Information System Success Model, user satisfaction is a key indicator of a system's success. The findings indicate that users find the system fairly easy to use, but it does not yet fully support work efficiency in dynamic operational conditions. Reliance on manual input processes increases administrative burdens and heightens the risk of recording delays. Although users feel the system aids in basic activities, limitations in integration and automation reduce work efficiency. This indicates that the system does not yet fully support optimal productivity.

- *Net Organizational Impact*

The inventory accounting information system has assisted management in making basic decisions, such as purchase planning and minimum stock control. However, the system is not yet optimal in supporting preventive risk mitigation. The lack of automatic validation and audit trails means that controls still rely on manual checks and periodic inspections.

Documentation shows that inventory discrepancies are still corrected manually by adjusting journal entries after a physical inventory count. This situation indicates that the system is not yet capable of detecting errors early on, before periodic physical inspections are conducted. Thus, the controls in place remain corrective rather than preventive. From an organizational perspective, the system has not fully improved the effectiveness of internal controls because it has not systematically

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reduced risks. This finding indicates that the inventory accounting information system at PT Harapan Indah remains more oriented toward administrative recording functions rather than risk-based strategic control functions. The system functions more as a recording tool than as a strategic control instrument.

Overall, the evaluation using the Information System Success Model indicates that PT Harapan Indah's inventory accounting information system is moderately effective. System quality is the weakest dimension because the system is not yet integrated and lacks automated controls. Meanwhile, information quality, user satisfaction, and organizational impact are fairly effective but still have limitations in timeliness and risk mitigation. These findings indicate that the inventory accounting information system has not yet been fully capable of optimally supporting internal controls. Weaknesses in system integration, limitations in access controls, and the absence of automatic validation mean that control functions remain heavily reliant on manual procedures and periodic audits. In the long term, this situation could increase the risk of recording errors, reporting delays, and weak early detection of discrepancies in inventory data. Therefore, a transformation toward a digital system with automated validation, access controls, and audit trails is a crucial step in strengthening the company's internal control effectiveness.

4.2 Discussion

4.2.1 Analysis of Weaknesses and Risk Implications

Based on an evaluation of PT Harapan Indah's inventory accounting information system, several fundamental weaknesses affect the effectiveness of the company's internal controls. The main weakness lies in the use of a spreadsheet-based system that is not integrated across departments and still relies on manual data entry. The lack of integration between the warehouse and accounting departments results in inventory data not being updated in real time, thereby increasing the risk of discrepancies between physical and administrative balances.

Based on the observations, the warehouse and administrative departments use different recording systems, so data synchronization occurs periodically via manual reconciliation. This situation results in a time lag between physical transactions and updates to administrative data. One informant stated that discrepancies in inventory data are sometimes only discovered during physical inventory counts. This finding indicates that the system is not yet capable of providing inventory information that is directly integrated across departments.

The absence of system-based access restrictions and an audit trail increases the potential for data manipulation or changes to information without a traceable record. This situation indicates that preventive and detective controls are not functioning optimally. Existing controls still rely on manual authorization and periodic physical inventory counts, so their effectiveness depends heavily on individual integrity and procedural discipline.

From an internal control perspective, these weaknesses indicate that the system lacks adequate automated controls to prevent or detect errors early. This finding aligns with Hall (2021), who explains that systems lacking access controls and audit trails are more vulnerable to unauthorized data changes. Thus, the internal control function at PT Harapan Indah remains more administrative than technology-based. Another weakness was identified in the risk assessment, which has not been formally documented. Although management is aware of the risks of inventory discrepancies and recording

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errors, the company does not yet have a risk matrix or a systematic risk evaluation mechanism. This results in risk management being reactive, only addressed after issues have already occurred.

Interview results with management indicate that risk identification is still based on work experience and situational assessments, rather than through structured written procedures. This situation demonstrates that the risk management process has not yet become an integral part of the company's internal control system. Within the COSO framework, weaknesses in risk identification can reduce an organization's ability to detect potential deviations before they cause greater operational impacts. The implications of these weaknesses are significant for operational stability and the reliability of financial statements. Potential risks include inventory recording errors, reporting delays, inaccurate decision-making, and internal fraud. In the long term, this situation can affect management's confidence in inventory data and the efficiency of the company's working capital utilization. These findings indicate that weaknesses in the inventory accounting information system not only affect administrative aspects but also potentially influence the effectiveness of the company's strategic decision-making. When inventory information is not readily available and reliable, decisions regarding purchasing, maintaining minimum stock levels, and managing working capital risk are based on inaccurate data. Over the long term, this situation can reduce operational efficiency and increase the potential for losses due to inventory data discrepancies. Thus, although the current system supports basic operational activities, its effectiveness in supporting risk-based internal controls still needs significant improvement. The transformation toward a more integrated, documented, and automated control-based system is critical to strengthening the reliability of the company's internal controls on an ongoing basis.

4.2.2 Recommendations for Improvement

Based on the analysis of the identified weaknesses and risk implications, PT Harapan Indah needs to take several strategic steps to improve the effectiveness of its inventory accounting information system. The first recommendation is to implement a software-based accounting information system that integrates the warehouse, administrative, and finance departments. An integrated system will enable real-time data updates, reduce duplicate entries, and improve data accuracy.

The implementation of an integrated system will also enhance the quality of information and the effectiveness of internal controls, as each transaction can be automatically recorded and directly documented. In the context of a company with high transaction volumes, such as PT Harapan Indah, system integration is crucial for minimizing the information gap between operational activities and administrative record-keeping. Second, the company needs to implement system-based access restrictions according to each user's authorization level. The use of audit trail features will help management monitor data changes and detect potential discrepancies more quickly. This step will strengthen control and monitoring activities as recommended within the COSO framework. In addition to enhancing data security, system-based access controls will clarify each user's responsibilities in the inventory recording process. Audit trails allow companies to track data changes more transparently, ensuring oversight is not solely reliant on manual checks. Consequently, monitoring functions can operate in a more preventive and systematic manner.

Third, the development of written standard operating procedures (SOPs) related to inventory management and accounting information systems is crucial. Formal documentation ensures procedural consistency and minimizes reliance on informal practices. Additionally, companies are advised to develop an inventory risk matrix as part of a systematic risk assessment process. The existence of written

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SOPs will also help companies maintain consistency in procedure implementation during personnel changes or increased transaction volumes. From an internal control perspective, formal documentation is a critical foundation for ensuring that all operational activities align with the organization's standards. Fourth, increasing the frequency of physical inventory counts and using supporting technologies, such as barcodes or digital inventory systems, can help reduce inventory discrepancies and improve monitoring efficiency.

The use of barcode or digital inventory technology will help the company improve the accuracy of automatic recording of goods received and shipped. In addition to speeding up the data entry process, this technology can also reduce the risk of human error arising from reliance on manual recording. Overall, these improvement recommendations aim not only to enhance the quality of the information system but also to strengthen the overall effectiveness of internal controls. The transformation toward a more integrated and well-documented system will positively impact the reliability of financial reports, operational efficiency, and the company's risk management. Thus, implementing these recommendations is expected to drive the development of PT Harapan Indah's inventory accounting information system from merely an administrative recording tool to a more strategic internal control instrument adaptable to the company's operational risks.

5. Concluding Remarks and Recommendation

Based on the results of a study evaluating the effectiveness of the inventory accounting information system at PT Harapan Indah, this study aims to analyze the extent to which the system supports the company's internal controls under manual and semi-computerized conditions. The research was conducted using a qualitative descriptive approach, drawing on interviews, observations, and documentation, and referencing the COSO Internal Control Framework and the Information System Success Model. The research results indicate that the inventory accounting information system has supported the company's basic operational activities; however, its effectiveness in supporting internal controls remains at a moderate level because the system is not yet integrated in real-time, lacks adequate access restrictions, and is not supported by audit trails and systematically documented risk assessment procedures. These conditions result in internal controls remaining heavily reliant on manual procedures and administrative oversight.

This study makes a theoretical contribution by reinforcing the understanding that the effectiveness of an accounting information system is determined not only by the system's ability to support transaction recording but also by its ability to support risk-based internal control functions. The integration of the COSO framework and the Information System Success Model in this study demonstrates that system quality, information quality, and internal controls are interdependent in creating a reliable information system. From a practical perspective, this study offers implications for trading companies to strengthen system integration, address access restrictions, improve procedure documentation, and enhance risk management as part of the digital transformation of internal controls. Furthermore, this study also underscores the importance of utilizing integrated technology as a strategic control instrument, not merely as an administrative recording tool.

This study still has several limitations, primarily because the research focused on a single company using a case study approach; therefore, the findings cannot yet be generalized to all trading companies. Furthermore, the evaluation of the accounting information system was conducted using a

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qualitative approach, so the interpretation of the results is still influenced by the empirical conditions and characteristics of the organization under study. Future research is recommended to expand the scope to companies with varying levels of digitalization and to adopt a mixed-methods or quantitative approach to ensure that the effectiveness of the accounting information system and internal controls can be measured more comprehensively and systematically.

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