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Evaluation of Inventory Accounting Information Systems Using Pieces Method: A Study on SIMEDi's Application

Evaluasi Sistem Informasi Akuntansi Persediaan Menggunakan Metode PIECES: Kasus Aplikasi SIMEDi

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ABSTRACT

This study aims to evaluate the SIMEDi inventory accounting information system in Perumda Perkebunan Kahyangan Jember. The method used in this study is a case study with a PIECES analysis approach. Data collection techniques were carried out by conducting interviews with the board of directors and staff who have access to SIMEDi. The PIECES approach involves six evaluation variables, namely performance, information, economic, control and security, efficiency and service. The results of the evaluation showed that SIMEDi meets the six PIECES variables, namely: all SIMEDi features have been running well (performance variables), the information produced by SIMEDi has met reliable input process output (information variables), the benefits generated from the implementation of SIMEDi are greater than the costs incurred (economic variables), SIMEDi has provided adequate system control to maintain the reliability of the information produced (control and security variables), SIMEDI makes inventory management at Perumda Kahyangan more efficient (efficiency variables), and SIMEDi is very user friendly and easy to operate (service variables). The SIMEDi Inventory Accounting Information System provides convenience and reliability for Perumda Perkebunan Kahyangan in managing inventory, especially for making appropriate and accurate decisions.

Keywords: Accounting, information, inventory, PIECES, system.

ABSTRAK

Penelitian ini bertujuan untuk mengevaluasi sistem informasi akuntansi persediaan SIMEDi yang ada di Perumda Perkebunan Kahyangan Jember. Metode yang dipergunakan pada penelitian ini ialah studi kasus dengan pendekatan analisis PIECES. Pendekatan PIECES melibatkan enam variabel evaluasi yakni performance, information, economic, control and security, efficiency dan service. Hasil dari evaluasi yang dilakukan menunjukkan SIMEDi memenuhi keenam variabel PIECES, yaitu: seluruh fitur SIMEDi telah berjalan dengan baik (variabel performance), informasi yang dihasilkan SIMEDi telah memenuhi input proses output yang andal (variabel information), manfaat yang dihasilkan dari implementasi SIMEDi lebih besar dari biaya yang dikeluarkan (variabel economic), SIMEDi telah menyediakan pengendalian sistem yang memadai untuk menjaga keandalan informasi yang dihasilkan

(variabel *control and security*), SIMEDI mengefisiensikan pengelolaan persediaan di Perumda Kahyangan (variabel *efficiency*), dan SIMEDi mudah dioperasikan dan digunakan (variabel *service*). Sistem Informasi Akuntansi Persediaan SIMEDi memberikan kemudahan dan keandalan bagi Perumda Perkebunan Kahyangan dalam mengelola persediaan, khususnya untuk mengambil keputusan yang tepat dan akurat.

Kata kunci: Akuntansi, informasi, PIECES, persediaan, sistem.

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INTRODUCTION

Given how intricate and time-sensitive the agriculture sector is, an Inventory Accounting Information System (IAIS) is essential. Perishability, Seasonal Production, Weather Variability and Pest and Disease Risks encourage the urgency of using inventory accounting information systems in the agricultural industry. Accurate and upto-date information on the amount, location, and value of inventory must be available through a good inventory accounting information system. Management can make better choices about the acquisition, storage, and distribution of commodities if they have the correct information (Aprilia et al., 2018). Furthermore, that lessens the possibility of either an excess or a deficit of inventory, which could interfere with efficient operations and lower consumer satisfaction. Convenience in the reporting and analysis process is another benefit of the inventory accounting system's information technology use (Rabinovich et al., 2003). Businesses can better monitor inventory flows and guarantee adherence to relevant accounting rules by using accounting software (Omar, 2023). In order to effectively compete in a dynamic market, it is crucial for businesses to create and maintain a trustworthy inventory accounting information system. Through a deep understanding of the importance of inventory accounting information systems, companies will not only be able to improve internal efficiency, but also strengthen their position in an increasingly competitive industry (Wangari, 2015).

A critical step that every organization must take to make sure the system is not only functional but also adds value to business decision making is to evaluate the implementation of accounting information systems (Neogy, 2014). Given the speed at which information technology is developing and the complexity of business, it is critical for organizations to evaluate how well the accounting information systems they have in place support their operational and strategic objectives. This evaluation is urgent since it is necessary to determine the system's advantages and disadvantages. Companies can determine if the accounting information system they have put in place has satisfied the requirements for timely, accurate, and transparent financial reports by carrying out routine evaluations. Evaluations also help firms foresee potential issues like mistaken data entry, ineffective procedures, or data security threats that could endanger the business.

Furthermore, assessing how accounting information systems are being implemented helps to improve financial management's accountability and transparency (Al-Okaily *et al.*, 2022). In this regard, an effective system offers the data required for performance analysis and strategic planning in addition to assisting in the creation of financial reports that adhere to accounting rules. As a result, assessment becomes a crucial component of the life cycle of accounting information systems (Romney *et al.*, 2012), enabling businesses to adjust to shifting market conditions and rapidly advancing technological advancements.

Therefore, it is crucial to assess how accounting information systems are being implemented in order to preserve operational efficiency as well as to guarantee the company's long-term viability and expansion. Organizations that can effectively perform assessments will have an advantage in making the proper decisions and addressing current difficulties in a business environment that is becoming more and more competitive.

Literatur Review

An inventory accounting information system is a set of protocols created to handle and document inventory management processes appropriately and effectively (Romney et al., 2012). An inventory accounting information system helps create accurate data for reporting and accounting needs while tracking inventory from acquisition to sale or final use. By fusing information technology and accounting procedures, the Inventory Accounting Information System essentially generates accurate and pertinent inventory. An inventory accounting information system is a collection of guidelines designed to manage and record inventory management procedures in a proper and efficient manner. While tracking goods from purchase to sale or final use (Bragg, 2005), inventory accounting information systems assist in producing correct data for accounting and reporting requirements. Managing stock, one of the most precious assets, requires a company's inventory accounting information system, particularly for companies involved in manufacturing or trading (Astuty et al., 2023).

Effective inventory management influences the company's overall financial health in addition to increasing operational efficiency (Anantadjaya et al., 2021). Implementing a dependable and thorough inventory accounting information system is one of the essential elements of efficient inventory management (Hassan, 2018). Data on inventory levels, lead times for replenishments, asset management, holding costs, demand forecasting, and other topics can be captured and analyzed using this system. In the end, a well-designed inventory accounting information system can boost competitiveness and profitability by giving managers the knowledge they need to optimize inventory levels and make well-informed decisions. A key element in determining the efficacy and efficiency of an organization's financial management is the evaluation of inventory accounting information systems. The PIECES framework offers a thorough method for evaluating the performance of such systems. It consists of Performance, Information, Economics, Control and Security, Efficiency, and Service (Handoko et al., 2024). Numerous information systems, particularly those in the accounting industry, have been evaluated using the PIECES framework (Indrayani et al., 2023; Julian et al., 2021; Muslih et al., 2021; Mustikasari et al., 2022; Rahmah et al., 2024; Zulfahmi et al., 2022).

Performance variables determine whether a system functions or not. The quantity of data results produced and the speed at which data may be located serve as indicators of this performance. Information variable is used to examine the amount and clarity of information that will be generated for a single search when it is generated to be shown. Economics variable is used to analyze the system and determine whether it is suitable for use in an information institution in terms of costs and finances. This is critical since the amount of expenses incurred also affects a system. Control and security is necessary for a system to function properly. To ascertain the level of oversight and control implemented to ensure the system functions properly, control and security variable is dan Organical Control and Security variable is described by the system of the system functions properly and security variable is dan Organical Control Control and Security variable is dan Organical Control and Security variable is dan Organical Control and Security variable is dan Organical Control Control

able to effectively solve and assist with an issue, particularly when it comes to automation. When a system produces a decent output with a small amount of input bias, this analysis is done to see if it is efficient or not. Service variables is still a significant factor that must be taken into account when using a system. If a system is balanced with good service, it will function properly and be balanced when it is implemented. The purpose of this analysis is to determine how the service is provided and to identify any issues that may arise.

RESEARCH METHOD

The method used in this study is a case study of the evaluation of SIMEDi inventory accounting information system at Perumda Kahyangan Jember. A case study is a thorough examination of a specific circumstance, incident, person, group, or organization that is used to examine difficult subjects in a practical setting. Case studies entail a thorough analysis of a topic, and seek to identify significant elements, trends, or revelations that can guide more general theory, practice, or solutions (Woodside, 2010). Data collection techniques were carried out by conducting interviews with the board of directors and staff who have access to SIMEDi. In addition, observations were also made on the running of the SIMEDi inventory accounting information system. Documentation techniques are also carried out through system test reports that have been carried out on the deployment of the SIMEDi accounting information system. Meanwhile, the evaluation of the implementation of the SIMEDi accounting information system was carried out using the PIECES analysis approach. The PIECES framework is used to classify issues, opportunities, and guidelines that are discovered during the scope definition, analysis, and system design phases (Safitri et al., 2020). PIECES analyzes information systems using six variables: Performance, Information, Economics, Control and security, Efficiency, Service.

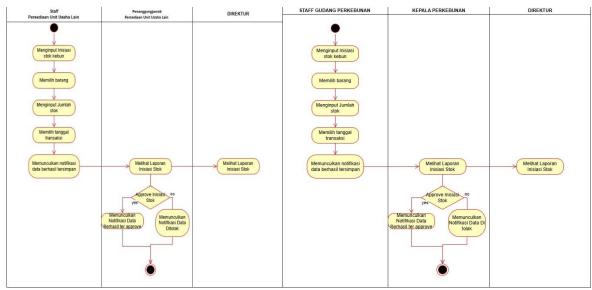
RESULT AND DISCUSSION

The evaluation was carried out on all the functions and features in the SIMEDi inventory accounting information system implemented at Perumda Perkebunan Kahyangan Jember. SIMEDi's features include: 1) Initiation of Plantation Stok, 2) Initiation of Warehouse Stok, 3) Harvest, 4) Production, 5) Internal Procurement, 6) External Procurement, 7) Adjusting Plantation Stok, 8) Adjusting Warehouse Stock, 9) Sales.

- 1) Initiation of Warehouse Stock Activity
 - Warehouse Stock initiation activity is a menu on the SIMEDi application to accommodate the input of the initial inventory balance in the warehouse. The party authorized to input the initial inventory balance is the warehouse inventory staff who then requests authorization from the superior in charge of the warehouse (Figure 1).
- 2) Initiation of Plantation Stock Activity
 - Plantation stock initiation activity is a menu on the SIMEDi application to accommodate the input of the initial inventory balance on the plantation. The party authorized to input the initial inventory balance is the plantation warehouse inventory staff who then requests authorization from the Plantation Head (Figure 2).

3) Harvest Activity

Harvest activities are carried out by plantation workers on harvested commodities, especially coffee commodities, which are then processed into green beans coffee. In this menu, Plantation Warehouse staff input the amount of green bean harvest stock, select the transaction date which is then requested for authorization from the Plantation Head, if the Plantation Head approves, the data will be updated in the system (Figure 3).

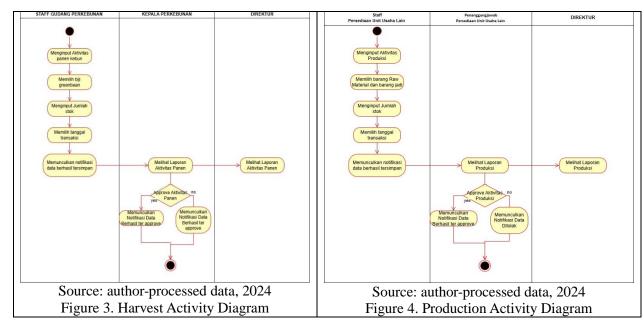


Source: author-processed data, 2024 Figure 1. Initiation of Warehouse Stock Activity Diagram

Source: author-processed data, 2024 Figure 2. Initiation of Plantation Stock Activity Diagram

4) Production Activity

Production activity is a menu provided by SIMEDi if there is a processing process from green bean coffee into processed coffee powder, roasted, etc. This activity is carried out by the marketing inventory staff to input the raw materials needed in the production process and finished goods produced from the production process and select the transaction date. Furthermore, the responsible superior will carry out authorization, if the inputted data has been approved, it will be stored in the system (Figure 4).

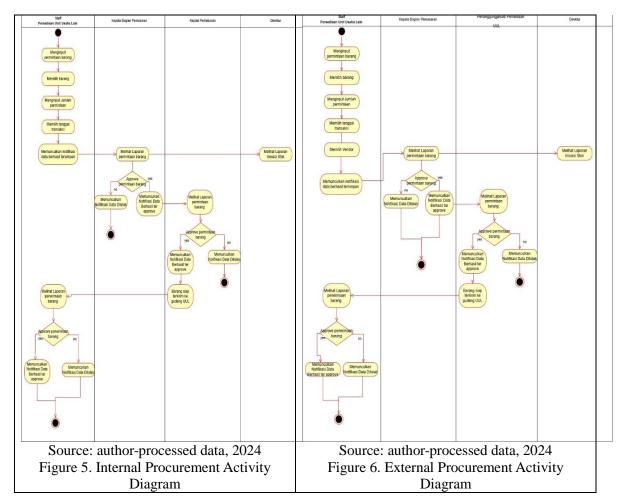


5) Internal Procurement Activity

Internal procurement activities involve warehouse inventory staff, direct supervisor who are responsible for authorizing and the plantation party. In the SIMEDi application, inventory staff can input requests for procurement of raw materials for production process needs, such as green bean coffee at the Plantation Warehouse. Furthermore, the internal procurement request will be requested for approval from the head of the marketing department to be forwarded to the plantation that has the stock in question. In this internal procurement menu, SIMEDi can produce a letter of request for goods in pdf format to be sent in parallel to the related plantation. If the goods are available and the request is approved by the Head of the Plantation, the requested goods will be sent and received by the warehouse inventory staff. In this receiving process, inventory staff can input the same or different amount of inventory from the initial request, this is adjusted to the physical goods received when the plantation sends them to the Warehouse (Figure 5).

6) External Procurement Activity

External procurement activities involve warehouse inventory staff, direct supervisor who are responsible for authorizing and the procurement of goods and services sub-section. In the SIMEDi application, inventory staff can input requests for procurement of raw materials for production process needs that are not provided internally by the Company, but must go through external vendors. Furthermore, external procurement requests will be requested for approval from the marketing department head to be forwarded to the procurement of goods and services sub-section. Furthermore, procurement is carried out through the procurement of goods and services sub-section. If the goods have been sent to the Warehouse, inventory staff can input the amount of inventory received according to the physical goods. The amount of goods received can be the same or different from the initial request, adjusted to the physical goods received (Figure 6).



7) Warehouse Stock Adjustment Activity Diagram

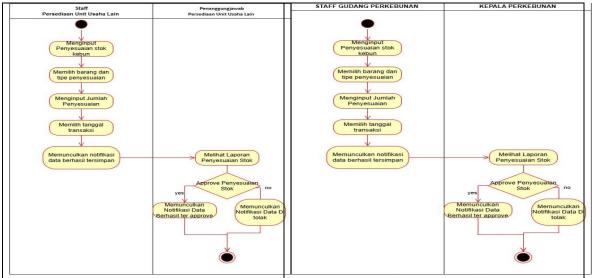
Warehouse stock adjustment activity is used to adjust the amount of recorded inventory with the physical goods in the warehouse. Warehouse inventory staff can make adjustments that are additional or reduced in this menu. After making input of inventory adjustments, the superior in charge of inventory can authorize. If approval has been made, the data will be stored in SIMEDi (Figure 7).

8) Plantation Stock Adjustment Activity Diagram

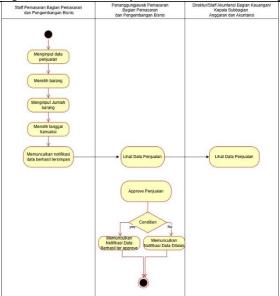
Plantation stock adjustment activity is used to adjust the amount of inventory recorded with the physical goods in the garden warehouse. Garden inventory staff can make adjustments that are additional or reduced in this menu. After making input of inventory adjustments, the head of the garden can authorize. If approval has been made, the data will be stored in SIMEDi (Figure 8).

9) Sales Activity

Sales activities in SIMEDi allow the marketing department to input the number of items sold along with the selling price and transaction date, then request authorization from the superior in charge of the marketing department. If the sales update is approved, the data will be stored in SIMEDi. This menu also provides a sales report that at least informs the cost price, number of products, selling price and profit (Figure 9).



Source: author-processed data, 2024 Figure 7. Warehouse Stock Adjustment Activity Diagram Source: author-processed data, 2024 Figure 8. Plantation Stock Adjustment Activity Diagram



Source: author-processed data, 2024 Figure 9. Sale activity diagram

Based on the functions and features available in SIMEDi, SIMEDi was evaluated using PIECES analysis:

1. Performance

The SIMEDi inventory accounting information system has been running quickly, accurately and reliably. The input process and output generated from all the features in SIMEDi are running well. Inventory management using web-based SIMEDi accelerates the inventory management process at Perumda Perkebunan Kahyangan. In processing data related to inventory, both inventory information on plantations, in warehouses, production inventory, and outgoing inventory (sales) can be generated quickly.

2. Information

The information generated by SIMEDi is very comprehensive and very helpful in making decisions related to inventory. SIMEDi is supported by an informative dashboard display and reliable data support. SIMEDi is able to provide information related to inventory at each warehouse and plantation location, internal procurement reports, external procurement reports, production reports, sales reports, inventory adjustment reports, and profits from product sales. This information certainly improves the company's ability to compete in the market.

3. Economic

To maintain SIMEDi's performance running well, Perumda Perkebunan Kahyangan has committed to providing a budget for the development and maintenance process, because the larger the size of the data processed, the more storage and servers with greater capacity will be needed. However, with relevant and reliable information, the benefits generated financially and non-financially are greater than the costs incurred because inventory decisions are made correctly and quickly, considering that before SIMEDi, inventory recording at Perumda Kahyangan Jember was done manually which had an impact on financial performance.

4. Control and Security

Control over the system has also been facilitated in SIMEDi with the authorization process for each existing activity, including stock initiation, harvest, internal and external procurement, production, sales, stock adjustments, so that there is a dual control of data input on the system that is always carried out by authorized superiors. This is intended to maintain the reliability of data and information generated from SIMEDi, through authorized input. In addition, each role has been provided with a user and password that is only known to the owner.

5. Efficiency

SIMEDi runs efficiently and streamlines the inventory management business process at Perumda Perkebunan Kahyangan through web-based automation. The input output process that was previously done manually by the company has become much more efficient after implementing SIMEDi. Data and information can be accessed easily, quickly and reliably anywhere and anytime for decision making, so that the accuracy of the data and information produced can streamline the work process and related costs, thereby improving financial performance. Effectiveness of utility will increase intentions to use (Siswanto & Kusumapradja, 2024).

6. Service

The ability of the SIMEDi system in providing satisfaction in service to users is very good. The inventory system is supported by features, interfaces and web bases that make it easy for anyone who has access to use it according to their role. In addition, SIMEDi is also easy to operate, so that the inventory management process can also be automated properly.

CONCLUSSION

The SIMEDi accounting information system has produced positive outcomes in terms of six elements: performance, information, economy, control, efficiency, and service, according to the results of a PIECES analysis. SIMEDi is a solution for inventory management automation in Perumda Kahyangan Jember. SIMEDi meets all dan Organisasi six variables: All SIMEDi features have been running well (performance variable), the information produced by SIMEDi has fulfilled the input of reliable output processes 385-396

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(information variable), the benefits generated from the implementation of SIMEDi are greater than the costs incurred (economic variable), SIMEDi has provided adequate system control to maintain the reliability of the information produced (control and security variable), SIMEDI streamlines inventory management in Perumda Kahyangan (efficiency variable) and SIMEDi is very user friendly and easy to operate (variable service). Through the implementation of SIMEDi, it is expected that the company's financial performance will increase. This evaluation uses the PIECES approach instrument which has never been carried out in the SIMEDi case, so that future research can see the useful contribution of other approaches.

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