Research Article

Analysis of Raw Material Inventory Accounting System in Inventory Control at PT Bernofarm Pharmaceutical Company

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Abstract: Inventory management of raw materials is a crucial aspect in the manufacturing industry, particularly in the pharmaceutical sector, as it directly affects the continuity of the production process. This study aims to analyze the raw material inventory accounting system in inventory control at PT Bernofarm Pharmaceutical Company. The methods used include direct observation of operational processes and interviews with management to obtain relevant and accurate data. The results of the study show that PT Bernofarm has implemented an integrated accounting information system within an ERP framework, covering procedures for raw material requisition, issuance, return, and recording of production costs. Each procedure is systematically arranged with clear task separation and is fully computerized. This facilitates internal control and monitoring of raw material flow, while minimizing recording errors. With this effective system, the company is able to avoid both overstocking and stock shortages that could disrupt production. This study is expected to serve as a reference for improving the efficiency and accuracy of raw material inventory management in other pharmaceutical companies.

Keywords: Inventory Accounting System; Raw Materials; Inventory Control; ERP; Pharmaceutical Industry

1. Introduction

Raw material stock management is very important for businesses, especially manufacturing companies such as the pharmaceutical industry, to ensure the production process runs smoothly. Raw materials are the main component that will be processed into finished products, raw materials must be maximally available. Raw materials are current assets in accounting that have economic value to the business and require proper recording to assist management decision making. Therefore, the use of an effective inventory accounting system can help businesses monitor the inflow and outflow of raw materials and find errors early.

According to [1], the inventory accounting system functions to provide accurate information about inventory values, inventory movements, and estimated raw material requirements based on production schedules. Management needs this information for production planning, cost control, and determining the cost of production. A good system prevents overstock and stockouts, both of which can be detrimental to the business in terms of cost and operational efficiency.

The current phenomenon in the industrialized world, including the pharmaceutical industry, shows that many businesses face problems in managing the supply chain due to global uncertainty, rising raw material prices, and dependence on imports of certain materials. This means that companies must be more careful in managing inventory, both in terms of quantity and quality and recording. The study by [2] found that inventory systems with internal controls integrated with accounting information systems can manage raw materials more efficiently and more accurately.

PT Bernofarm Pharmaceutical Company is one of the leading pharmaceutical companies in Indonesia, and its production system is highly dependent on the availability of well-organized raw materials. With high production volumes and diverse product types,

controlling the availability of raw materials is a challenge. To overcome this, the company uses a computerized information system (ERP) that is integrated with the accounting system. ERP is used to record requests, usage, and returns of raw materials in real-time.

This research is also supported by relevant previous studies, such as those conducted by [3], which state that an accounting information system integrated with inventory management can assist companies in reducing the level of recording errors and increasing the efficiency of controlling raw materials. By analyzing the system implemented by PT Bernofarm, it is hoped that this research can provide useful input for companies in improving the accuracy of recording and the effectiveness of controlling raw material inventory.

2. Literature Review

2.1. System Information

The accounting system is a vital component in the financial management of the company, functioning as a tool for recording, managing, and controlling financial transactions. According to [4], the accounting information system is a series of procedures and methods used to record, classify, process, and report financial information related to the company's operational activities. Meanwhile, according to [5] states that accounting understanding and utilization of accounting information systems have a significant influence on the quality of financial statements. So, the accounting system can be concluded as an organized method, consisting of forms, records,and reports, which are used to collect and present financial information.

2.2 Inventory

According to Statement of Financial Accounting Standards (PSAK) Number 14 cited in [6], inventory is defined as assets available for sale in the normal course of business, in the production process for such sales, or in the form of raw materials or equipment for use in the production process or service delivery. So, inventory is an important asset of the company which can be in the form of raw materials, goods in process, or finished goods, which are prepared for sale or support the production process and other operational activities. Good inventory management is needed so that operational activities are not disrupted and production costs remain efficient.

2.3 Inventory Accounting Information System

According to [1], in the inventory accounting information system, there are several important documents used in the inventory management process, namely purchase orders, goods receipt reports, memorial evidence, and physical calculation cards. All of these documents are used as a means of systematic control and recording in the inventory accounting system. Meanwhile, another study by [7] strengthens this view, that the inventory accounting information system (AIS) is a system that processes transaction data to produce relevant and useful information in supporting internal control over inventory. It can be concluded that the inventory accounting system is a structured system used by companies to record, manage, and report information about inventory items.

2.4 Implementation of ERP System in Inventory Accounting System

Enterprise Resource Planning (ERP) is an integrated system that covers various aspects of a business, including accounting and inventory management. ERP allows the process of recording, tracking, and reporting to be done in one centralized platform. Studies by [8] show that the implementation of ERP can improve efficiency in inventory management and reduce production costs, which is especially important in industries that require high accuracy and compliance with regulatory standards.

3. Research Methods

This research was conducted at PT Bernofarm Pharmaceutical Company located in Sidoarjo Regency, East Java. This study uses a descriptive method with a qualitative approach. According to [9], qualitative research is a process that places the researcher directly in the

context being studied. The purpose of this qualitative approach is to describe the implementation of the inventory accounting system at PT Bernofarm Pharmaceutical Company. The data collection techniques used in this research are observation and interviews. The data collection techniques used in this research are observation and interviews. According to [10], observation is a data collection method conducted by directly observing the object or issue that is the focus of the research. In this study, the researcher conducted participatory observation by actively engaging in the recording of raw material usage and returns of raw material usage, as well as stock opname in the raw material warehouse of PT Bernofarm Pharmaceutical Company. Meanwhile, interviews are a data collection method that involves direct interaction between the researcher and the informant. This process is conducted in a question-and-answer format to obtain information related to the research object [11]. The main topic of the direct interview is related to the research object that will be discussed. This method uses procedures related to the management of raw material inventory.

4. Results and Discussion

4.1. Result

1) Accounting Functions Involved in Inventory Accounting System

In the inventory accounting system, there are several functions or sections that have an important role in supporting the smooth process of recording and controlling inventory. The production department is responsible for submitting requests for raw materials needed for the production process, returning unused raw materials, and providing data on material usage and production costs to related departments. The warehouse section has the task of storing raw materials, issuing materials according to production requests, receiving back the remaining materials from production, and supporting physical checking or stock-taking activities by providing data and the physical condition of available goods. Furthermore, the accounting department plays a role in recording all transactions related to inventory, compiling accounting journals, assessing the cost of goods produced, and recording the cost of goods in process for financial reporting purposes.

The inventory card section is in charge of recording every mutation of raw materials entering and leaving the warehouse, so that inventory balances can be monitored accurately. Meanwhile, the cost card section has the responsibility to collect and record all production costs, both from the use of raw materials, direct labor, and factory overhead, and classify costs according to their type. The journal section is in charge of preparing journals for all transactions that occur, especially those related to inventory movements and production processes, including recording the difference in stock-taking results. Finally, the Quality Control (QC) section has an important role in ensuring the quality of raw materials entering and leaving the warehouse remains suitable for use and checking the condition of materials when stock-taking is carried out. All of these sections are integrated in order to create an accurate, efficient and reliable inventory control and recording system.

2) Challenges in The Implementation of The Inventory Accounting System

In the implementation of the inventory accounting system at PT Bernofarm, despite being supported by ERP technology, there are still various significant technical and operational obstacles. One of the main obstacles is manual input errors (human errors), especially during the initial processes such as receiving goods and recording production results. Some important data such as the quantity of goods, product codes, and storage locations still have to be entered manually by the operators, making them susceptible to typos or incorrect selections. Additionally, disruptions in the ERP system such as downtime or slow system response also pose their own challenges, as they can cause delays in recording or even temporary manual recording that risks not being updated on time, leading to data discrepancies. Another issue is damage to barcodes or unreadable labels, which forces the recording process to be done manually, slowing down operational processes, and increasing the risk of recording errors.

Another obstacle that affects the accuracy of the system is the timing of the recording, where items are often moved first but recorded later. This causes the location of the goods in the system to not match their actual position in the warehouse. As a result, discrepancies or differences often occur between the system records and the actual physical condition of the goods, which can be caused by errors in stock opname calculations, unrecorded lost or damaged items, and mistakes in the placement of goods between warehouses. Additionally,

delays in administrative processes, such as returns or the release of goods that have not been immediately recorded, also contribute to data discrepancies.

4.2. Discussion

Based on the result and discussion regarding the raw material inventory accounting system at PT Bernofarm Pharmaceutical Company, the author analyzes that the procedures implemented are in accordance with the study by [1] the inventory accounting system aims to record the movements of each type of inventory in the warehouse. Furthermore, the implementation of the inventory accounting system in the raw material warehouse of PT Bernofarm Pharmaceutical Company has similarities and differences when compared to the theoretical framework proposed by [12]. The difference lies in the physical inventory counting system for raw materials, which is conducted only during stock opname. At PT Bernofarm Pharmaceutical Company, the physical inventory counting system is not only conducted during stock opname but also during the issuance and return of raw materials. Furthermore, there are several systems and procedures related to the inventory accounting system at PT Bernofarm Pharmaceutical Company as follows:

1) Analysis of Warehouse Goods Request and Release Procedures

The procedure for requesting and issuing raw materials from the warehouse involves several stages, starting with the production department creating a request letter through the system. The letter is then sent to the warehouse department for follow-up. Upon receiving the request letter, the warehouse department creates a raw material delivery letter and sends the raw materials along with the delivery letter to the production department. The production department then receives the raw materials and begins the production process. Next, the warehouse department records the transaction by creating a request and issuance proof through the system, adjusting the stock, and preparing a raw material inventory report to be sent to the accounting department.

The accounting department plays an important role in controlling and verifying the changes in raw material inventory based on documents received from the warehouse. Although they have received reports and transaction evidence from the warehouse, the accounting department still conducts checks on the data to prevent fraud and ensure the validity of the transactions. After the verification process, the accounting department prepares a raw material inventory reconciliation report and sends it to the manager for final authorization. The functions involved in this procedure include the production department, warehouse, accounting, and manager, which overall demonstrate a good internal control system through task separation and layered reporting.

2) Analysis of Procedure for returning raw materials to the Warehouse due to production leftovers

The procedure for returning raw materials to the warehouse due to production leftovers involves a more complex workflow with multiple departments. The process begins with the production department creating a Warehouse Return Receipt through the system and sending the receipt along with the leftover raw materials to the warehouse department. After the warehouse receives the raw materials and signs the warehouse return receipt as proof of receipt, the warehouse department records the transaction into the warehouse card. Next, the authorized proof is sent to the inventory card section for the input of the cost price and the recording of stock additions on the inventory card.

After the recording by the inventory card section, the warehouse return receipt is forwarded to the cost card section to input the cost price into the Product Cost Card. Then, the warehouse return receipt is sent to the journal section for journal entry, recording the increase in the raw material inventory account and the decrease in the work-in-progress account. This process shows that the return of raw materials not only affects the physical goods but also the cost recording and inventory value. The functions involved in this procedure include the production department, warehouse, inventory cards, cost cards, and journals, all of which work together to ensure data accuracy and transparency in the management of leftover production raw materials.

3) Analysis of Physical Inspection or Recording Procedures

The procedure for checking or recording physical inventory begins with the Quality Control (QC) department, which is responsible for holding the Physical Count Card (PCC). QC creates three copies of the PCC and distributes them to the counting department. The counting department then conducts a physical count of the items according to the items listed in the PCC and records the results on the third part of the physical count card. The third part

of the card is torn off and hung on the shelf or storage area as a sign that the items have been counted. Next, the counting section returns the first and second parts of the physical counting card to QC for comparison. If the results on both parts of the card do not match, a recalculation is performed. If the results match, then proceed with recording the calculation results into the Physical Inventory Calculation Results List and send it to the inventory card section.

The inventory card section receives the physical count result list, then fills in the unit cost and total and requests authorization for validation. After approval, this section creates a memorial proof and generates an updated inventory card. The results list of the second physical count is then sent to the warehouse section, while the memorial proof is sent to the journal section for recording in the general journal. In addition, the counting section also performs verification by refilling the physical count card of the second section and hanging the physical count card of the first section in the storage area as a sign of finalization. Finally, the warehouse section receives the list of physical inventory results from the inventory cards and adjusts the stock in the warehouse cards. The functions involved in this process include the QC department (as cardholders, counters, and verifiers), the warehouse department, the inventory card department, and the accounting department (journal), all of which play a crucial role in maintaining the accuracy and integrity of the company's physical inventory data.

4) Analysis of The Procedure For Recording The Cost of Goods in Process Inventory

The procedure for recording the cost of production in process begins with the production department, which creates the Work in Process Report through the system and then sends it to the inventory card section. After receiving the work in process report, the inventory card section calculates the cost of work in process inventory based on the data on the product cost card. Next, the inventory card section creates two memorial vouchers. The first memorial voucher is used to record the amount of factory overhead costs allocated to the product cost based on the predetermined rate. The second memorial voucher is used to record the cost of work in process inventory at the end of the accounting period.

Both memorial proofs were sent to the journal section for recording. Based on the first memorial evidence, the journal section records the allocation of factory overhead costs to work-in-process products with the journal entry:

Work in Procces- Overhead Cost   xxx
Applied Factory Overhead Cost   xxx

Then, based on the second memorial evidence, the journal section records the cost of goods in process inventory at the end of the accounting period with the journal entry:

Work in Procces Inventory   xxx
Work in Procces   xxx

The functions involved in this procedure include the production section, the inventory card section, and the accounting section (journal), which play a crucial role in ensuring the accuracy of cost and inventory value recording in the process.

5) Analysis of Constraints in the Implementation of Inventory Accounting Systems

In inventory management, PT Bernofarm faces several technical challenges despite using an ERP system. One of the main challenges is the manual input errors that still occur, especially during the receipt of goods and the recording of production results. These errors include typos in quantities, item codes, or storage locations, which can lead to discrepancies between system data and the physical condition of the goods. [13] emphasize that although ERP improves efficiency, human error remains a serious challenge in computerized systems, especially in the pharmaceutical industry, which heavily relies on data accuracy.

Another issue that arises is disruptions in the ERP system, such as downtime or slow response, requiring manual recording in the meantime. This increases the risk of backlog and delays in data updates. However, based on the findings [14], the implementation of ERP at Nuqul Group significantly positively impacts supply chain integration, particularly in terms of internal process efficiency and improved relationships with suppliers and customers. Thus, although ERP offers many strategic benefits, technical challenges such as system disruptions still need to be anticipated so that the integrative benefits of ERP can be optimally achieved. Damage to barcodes or unreadable labels can trigger manual recording and slow down the logistics process. However, according to [15], the implementation of barcodes in warehouse management systems generally still improves efficiency, data accuracy, and work process speed. However, these benefits are highly dependent on the condition of the barcode and the functionality of the scanner.

Inaccurate time recording also causes stock discrepancies. Items are often moved before being recorded in the system, resulting in inaccurate location information. [16] explain that

an ERP design that is not responsive to real-time movement can cause disruptions in stock reporting accuracy. This is exacerbated by discrepancies found during stock opname, such as damaged goods, unrecorded losses, and placement errors, worsening the inventory management condition. According to [17], the Pharmacy Installation at RS Sundari Medan conducts stock opname periodically, initially every three months and planned to increase to every month. This activity aims to match the physical quantity of drugs with the records on the inventory cards to ensure the accuracy of stock data. Thus, stock opname plays an important role in detecting stock discrepancies, including missing, damaged, or misplaced items.

As a corrective measure, PT Bernofarm conducts routine and incidental stock opname, as well as reconciliation between system records and physical warehouse inventory. If there are discrepancies, accounting adjustments are made with complete documentation. [18] also recommend the use of technologies such as AI and blockchain to enhance the efficiency and transparency of inventory recording. Additionally, the company regularly provides ERP usage training to staff to enhance technical understanding and compliance with SOPs. [19] emphasize that good training is the key to successful ERP implementation because digital systems are only effective if their users are competent and understand the workflow.

6) The Role of Inventory Accounting Systems

The accounting system plays a very strategic role in supporting the effectiveness of internal control over inventory, especially in the pharmaceutical industry like PT Bernofarm, which faces a high level of complexity in stock management, product quality, and regulatory compliance. One of its main functions is to provide accurate and real-time transaction recording, supported by integrated ERP systems. Through this system, all inventory-related activities—from the receipt of raw materials, usage in the production process, to the release of finished products—are recorded automatically and promptly. This not only reduces the risk of manual input errors but also ensures that the data always reflects the actual conditions on the ground. The accounting system also plays a crucial role in managing product expiration dates and batch numbers through the application of the FEFO (First Expired First Out) method, ensuring that items nearing their expiration dates are used or distributed first. This is very important to maintain product quality and avoid losses due to expired goods. In addition, systematic recording of batch numbers also allows for precise tracking of products in the event of a market recall, which is a critical requirement in the pharmaceutical industry.

From the perspective of internal control, the accounting system supports the implementation of the principle of segregation of duties and strict access control. At PT Bernofarm, the processes of recording, verifying, and approving inventory transactions are divided into several different departments according to the authorization levels of each role, so that no individual has full authority over the entire transaction cycle. This structure reduces the potential for fraud such as embezzlement or inventory data manipulation. In addition, the system also provides an audit trail feature that records every user activity, including information on who performed the transaction, when it was done, and what changes occurred. This transaction trail is important for both internal and external audit purposes, including audits from BPOM, ISO, and other certification bodies. In terms of reconciliation, the accounting system facilitates the matching of physical stock opname results with system records, and if discrepancies are found, adjustment journals can be created automatically after a verification process. This ensures that the financial statements reflect the actual condition, while also serving as a control to detect errors and potential fraud. Furthermore, the accounting system also generates various managerial reports such as end inventory reports, aging inventory, and inventory turnover analysis, which serve as the basis for strategic decision-making, such as purchase planning, supplier performance evaluation, and distribution allocation. In other words, the accounting system is not merely a recording tool, but a vital component in building an effective, efficient, and regulatory-compliant internal control system in the pharmaceutical sector.

5. Conclusions

Based on the analysis of PT Bernofarm's raw material inventory accounting system, it can be concluded that the company has established a structured and well-documented system that supports operational efficiency and accountability. Key procedures such as material requests, issuance, returns, cost recording, and physical checks are implemented systematically, in line with the principles of functional separation and strong internal control.

The use of an ERP system reflects the company's efforts to integrate departments, speed up information flow, and ensure accurate transaction records.

Despite these strengths, technical and operational issues still occur, including manual input errors, ERP disruptions, and barcode scanning problems, leading to mismatches between system data and actual stock. To address these, PT Bernofarm conducts regular and incidental stock opname, reconciles warehouse and accounting data, and makes well-documented adjustment entries. The company also invests in employee training on ERP use, batch and expiry date standards, and compliance with GMP and BPOM regulations. Overall, the system supports inventory control through real-time recording, the FEFO method, and audit trails, ensuring transparency, accuracy, and accountability.

References

[1] B. Zhao and C. Tu, "Research and Development of Inventory Management and Human Resource Management in ERP," *Wireless Communications and Mobile Computing*, vol. 2021, no. 1, p. 3132062, Jan. 2021, doi: 10.1155/2021/3132062.

[2] F. D. Utami, W. Puspitasari, and M. Saputra, "Design of Planning Model for ERP System in Warehouse Management: An Empirical Study of Public Hospital in Indonesia," *IOP Conf. Ser.: Mater. Sci. Eng.*, vol. 909, no. 1, p. 012061, Dec. 2020, doi: 10.1088/1757-899X/909/1/012061.

[3] F. E. Putra, M. Khasanah, and M. R. Anwar, "Optimizing Stock Accuracy with AI and Blockchain for Better Inventory Management," vol. 6, no. 2, 2025.

[4] G. A. Mudjiono, K. Hidayati, and N. L. Inayah, "Analisis Penerapan Sistem Informasi Akuntansi Pembelian Bahan Baku dalam Rangka Mewujudkan Pengendalian Intern pada Master Cup di Sidoarjo," *Equity*, vol. 3, no. 2, pp. 95–101, May 2023, doi: 10.46821/equity.v3i2.338.

[5] H. Ahmad, R. Hanandeh, H. Mustafa, and H. Alzagheer, "The Effects of ERP System Implementation on the Integration of Supply Chain," 2021.

[6] J. W. Creswell, *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 2018.

[7] L. Ernawati, N. Afif, and M. M. Melani, "Pengaruh Sistem Informasi Akuntansi dan Pengendalian Internal Terhadap Efektivitas Pengelolaan Persediaan Bahan Baku Pada PT. Yongjin Javasuka Garment II," *Innovative: Journal Of Social Science Research*, vol. 4, no. 4, pp. 1364–1375, 2024.

[8] L. I. Kaban, E. Girsang, and S. L. R. Nasution, "Analysis of the Implementation of Drug Inventory Control Using the ABC-EOQ-ROP Method at Sundari Hospital Medan," no. 1, 2025.

[9] M. M. Huda, A. A. Aziz, A. Jayani, and B. Prasetya, "Metode Observasi Lingkungan Dalam Upaya Peningkatan Hasil Belajar IPA Siswa MTs Zahrotul Islam Probolinggo," vol. 2, 2025.

[10] M. R. Nurmatama and T. Haryati, "Optimalisasi Prosedur Stock Opname Dalam Audit Persediaan pada KAP XYZ: (Optimization of Stock Opname Procedures in Inventory Audits at KAP XYZ)," *SBAMR*, vol. 6, no. 3, pp. 1–14, Sep. 2024, doi: 10.61656/sbamr.v6i3.230.

[11] Mulyadi, *Sistem Akuntansi*, Edisi 4. Jakarta: Penerbit Salemba, 2016.

[12] N. A. Istiqomah, P. F. Sansabilla, D. Himawan, and M. Rifni, "The Implementation of Barcode on Warehouse Management System for Warehouse Efficiency," *J. Phys.: Conf. Ser.*, vol. 1573, no. 1, p. 012038, Jul. 2020, doi: 10.1088/1742-6596/1573/1/012038.

[13] A.P. Rizqullah and Achmad, "Analisis Sistem Informasi Akuntansi Persediaan Untuk Meningkatkan Pengendalian Internal di Gudang PG. Assembagoes," *MAZINDA: Jurnal Akuntansi, Keuangan, dan Bisnis*, vol. 3, no. 1, 2025, doi: 10.35316/mazinda.v3i1.6792.

[14] R. A. M. L. Wullur, H. Karamoy, and W. Pontoh, "Analisis Penerapan Akuntansi Persediaan Berdasarkan PSAK No.14 Pada PT. Gatraco Indah Manado," *GC*, vol. 11, no. 1, Mar. 2016, doi: 10.32400/gc.11.1.10552.2016.

[15] R. Firdaus, "Sistem Informasi Akuntansi: Pengertian, Komponen, dan Pentingnya dalam Perusahaan," no. 6, 2024.

[16] S. M. Mawari, "Analisis Sistem Akuntansi Persediaan Bahan Baku dalam Upaya Mendukung Pengendalian Intern Persediaan Bahan Baku (Studi pada PT Fresh On Time Seafood Martapura)," 2022.

[17] S. Singh, S. Singh, and S. C. Misra, "Post-Implementation Challenges of ERP System in Pharmaceutical Companies," *International Journal of Quality & Reliability Management (IJQRM)*, vol. 40, no. 4, pp. 889–921, Mar. 2023, doi: 10.1108/IJQRM-10-2020-0333.

[18] S. Susanti, M. Y. Darmita, and T. K. Dewi, "Pemahaman Akuntansi dan Pemanfaatan Sistem Informasi Akuntansi Terhadap Kualitas Laporan Keuangan," *JEMSI*, vol. 10, no. 2, pp. 1485–1490, Apr. 2024, doi: 10.35870/jemsi.v10i2.2387.

[19] T. S. Wulan, P. W. Novika, E. Nurvianti, and F. A. Putra, "Impact of ERP System Implementation on Operational and Financial Efficiency in Manufacturing Industry," *J. of Economic Education Studies*, vol. 5, no. 3, pp. 491–501, Sep. 2024, doi: 10.62794/je3s.v5i3.4328.