



ANALYSIS OF THE IMPLEMENTATION OF THE RAW MATERIAL INVENTORY INFORMATION SYSTEM AT MSMEs MAWAR BAKERY & CAKE SHOP

Desi Mutiara Dini Rumapea¹, Winda Krisdianti Zentrato², Ryndian Gusty^{3*}, Nursiah⁴,
Jenni Sari Tarigan⁵

^{1,2,3,4} Jurusan Administrasi Niaga, Politeknik Negeri Medan;

E-mail: desimutiradinirumapea@students.polmed.ac.id¹,

windakrisdiantizentrato@students.polmed.ac.id², ryndian@polmed.ac.id³

ABSTRACT

E-Journal Integrative
Vol. 1, No. 1
March 2026
Hal. 61-75

p-ISSN:
e-ISSN:

This research aims to analyze the implementation of a Raw Material Inventory Information System at Mawar Bakery & Cake Shop, specifically at the Setia Budi branch in Medan. Although Mawar Bakery has implemented digitalization in sales through the use of Point of Sale (POS) systems, the management of raw material inventory is still carried out manually using bookkeeping and daily reports. This condition causes several problems, including inaccurate stock data, delayed reporting, the risk of human error, a lack of information synchronization between divisions, and low digital literacy among employees. The research approach used a descriptive qualitative method with data collection techniques through direct interviews with SPG staff and observation of daily operations. Analysis was conducted using Miles & Huberman's theory and the Technology Acceptance Model (TAM), which assesses two key factors of technology acceptance: perceived usefulness and perceived ease of use. The study's results indicate that the staff recognize the benefits of the digital system but still face obstacles in ease of use due to lack of training and the absence of a digital-based SOP. This research finds that inventory digitization is essential to improve stock accuracy, production process efficiency, reporting speed, and the accuracy of managerial decision-making. Key recommendations include implementing a cloud-based inventory system, integrating POS with the inventory system, providing digital literacy training for all employees, upgrading technology infrastructure, and conducting regular system evaluations. By implementing these strategies, Mawar Bakery has the potential to improve operational efficiency, reduce manual errors, and strengthen its competitiveness as a modern bakery SME.

Keywords: Raw Material Inventory, MSMEs, Point of Sale, Technology Acceptance Model, Digital Inventory.

INTRODUCTION

MSMEs (Micro, Small, and Medium Enterprises) have a fundamental role in the Indonesian economy. More than 60% of Indonesia's Gross Domestic Product (GDP) is supported by MSMEs, and the culinary sector, including bakery, is one of the fastest-growing business sectors over the past five years. The increase in public demand for cake, bread, and pastry products has made many MSMEs in the bakery sector compete in innovation, quality, and speed of service, including raw material inventory management. Mawar Bakery & Cake Shop is one of the MSMEs that has been running its business for more than ten years and has grown from a simple store to a business that has several branches. This store was established on February 8, 2003 and is located at Jalan Pinang Baris No. 261 Medan. One of its branches is in the Setiabudi area. The Setiabudi branch itself is located at Jalan Setiabudi No. 3 Medan, as one of the main outlet from Rose Bakery that Spread at city Terrain and surroundings.

The branch on Jalan Setia Budi Medan is one of the most active and strategic branches, located in an area that is crowded with students, office workers, and families living around the area. The availability of diverse products and the ability to provide daily needs and special orders make Mawar Bakery increasingly in demand. The application of a digital-based management information system in Micro, Small, and Medium Enterprises (MSMEs) is very important in the era of globalization and the development of information technology. MSMEs have a strategic role in the national economy, but often encounter challenges such as limited access to capital, low digital literacy, and lack of use of technology in business management. Digitalization is the main solution to increase the competitiveness and efficiency of MSME businesses through the implementation of a digital-based Management Information System (SIM) (Naldi et al., 2025).

According to Bodnar and Hopwood (2004) *"information management systems are a collection of hardware and software designed to transform data into useful information"*. The implementation of this SIM includes aspects of financial management, inventory, digital marketing, and customer relations. In addition, the use of technologies such as cloud computing, big data analytics, Internet of Things (IoT), and artificial intelligence can help MSMEs respond to market demand faster, increase productivity, and optimize their business operations. The use of driver's licenses in MSME bakeries such as Mawar Bakery & Cake Shop is very relevant considering the need to manage raw material stocks that are perishable and must always be available in the right quantity, as well as accurate sales records to maintain smooth business (Budidharma, 2025; Nugroho, 2023). SIM allows business processes to run faster and the resulting data becomes material for precise and objective decision-making.

According to McLeod (2012), *"the main function of the SIM is to provide timely and relevant information to assist management in effective planning, monitoring, and decision-making. With the existence of a driver's license, the company's operational activities can take place more efficiently because the administrative, recording, and reporting processes are automatically integrated"*. This is in line with the opinion of Davis (2002) who *"states that SIM improves organizational efficiency by speeding up communication, reducing duplication of work, and reducing manual errors"*.

Therefore, the use of a driver's license in bakery businesses such as Mawar Bakery & Cake Shop is a strategic step to maintain smooth operations while increasing business competitiveness. However, in the midst of this business development, there are significant operational challenges, especially related to the management of raw material inventory. Inventory management is one of the vital aspects of a bakery business because the production of bread and cakes depends on ingredients that must be available in fresh conditions and in the right quantity. A lack of ingredients such as eggs, flour, butter, milk, or sugar can

immediately stop the production process. On the other hand, excess stock can make materials spoil quickly and increase operational costs.

In the interview process, it was found that Mawar Bakery still uses manual methods in managing raw material inventory. Checks are carried out physically, records are made in books, and reports are submitted via chat. This method is still commonly found in MSMEs, but it has many weaknesses such as information delays, the risk of human error, data duplication, and the absence of integration between warehouses, production, and cashiers. On the other hand, Mawar Bakery has begun to implement digital technology in the sales department, namely through the use of digital POS. This shows that businesses actually have digital awareness, but the implementation is not evenly distributed across all operational parts. The adoption of inventory information systems can help bakeries improve process efficiency, accelerate the detection of depleted raw materials, reduce waste, improve the accuracy of daily reports, and make it easier for business owners to monitor stock needs from anywhere. However, the success of system implementation is not only determined by technology, but also by the readiness of human resources (HR). The results of the interviews show that some employees are not fully used to using digital devices and still have concerns about the new system.

The Raw Material Inventory Information System (SIPBB) is an important tool to regulate the flow of raw materials from receipt, storage, to use in daily production. The implementation of SIPBB in this branch needs to consider factors such as daily product variations, production schedules, purchase of raw materials from several suppliers, as well as operational constraints such as limited storage space at local locations. Therefore, this research was conducted to provide a comprehensive overview of the condition of the running system, analysis based on academic theory, obstacles faced, and the best strategies to improve the management of Mawar Bakery's inventory.

According to Porter & Millar (1985), *"information technology is able to create a competitive advantage by strengthening internal efficiencies and improving relationships with customers. By implementing a good information system, business actors can improve work effectiveness and customer service quality"*.

LITERATURE REVIEW

Information Systems

Information systems according to Laudon & Laudon (2020) are a set of interconnected components to collect, process, store, and disseminate information to support decision-making and organizational control. This information system consists of five main components:

1. People – system users (Officers, managers)
2. Hardware - computers, smartphones, printers
3. Software - aplikasi, POS, inventory system
4. Data - transaction information, stock, reports
5. Network - internet, WiFi, intrane

These five components must be balanced for the system to function properly.

Meanwhile, Stair & Reynolds (2020) stated that an information system is an organized combination of people, hardware, software, communication networks, and data resources that function to collect, process, store, and disseminate information.

Management Information System (Sim)

According to James A. O'Brien (2017), a Management Information System (SIM) is a computer-based system that provides information for managers to support decision-making and

organizational operational functions. Meanwhile, McLeod (2018) explained that SIM is the process of collecting, processing, storing, and disseminating information needed in carrying out management tasks.

Raw Material Inventory

According to Ristono (2013), raw material inventory is all materials used in the production process that have not been processed or are still in their original form. There are three main types of preparations:

1. Raw materials (flour, eggs, milk, butter, etc.)
2. Semi-finished goods
3. Finished goods (bread and cakes ready to sell)

Heizer & Render (2020) explained that inventory is one of the important assets that affect the smooth running of production, so its management must be accurate and timely.

Inventory Information System

According to Romney & Steinbart (2018), inventory information systems aim to improve the accuracy of stock recording, prevent loss of goods, reduce human error, and speed up transactions. The inventory system should have:

1. Data accuracy
2. Integration with other systems
3. Auto-tracking feature
4. Minimum stock reminder
5. Ability to speed up the decision-making process.

An effective inventory system must have components: real-time data, inter-division integration, automated reporting, and monitoring.

Theory of Technology and Human Resources

Technology Acceptance Model (TAM) – Davis (1989). This theory explains that the successful implementation of technology is influenced by:

1. Perceived Usefulness
2. Perceived Ease of Use

TAM is very relevant to be used to analyze how Mawar Bakery employees respond to digital systems.

Inventory management is one of the important elements in the sustainability of the production process, especially in food-based MSMEs such as bakeries. According to MASRI, F. R. (2023), inventory functions as a balance between demand and availability of materials, and plays a role in maintaining smooth production. In the bakery industry, the need for inventory is sensitive because it uses perishable raw materials and has a limited shelf life. Therefore, an inventory information system is needed to reduce uncertainty and improve the accuracy of stock data. Syahputra, A., Wiranti, R., & Astita, W. A. W. (2022) emphasized that information systems allow organizations to manage data into relevant information so that they can support decision-making. With the implementation of an inventory information system, the recording process can be carried out automatically and in a structured manner, thereby reducing human error that often appears in manual recording.

Several previous studies have shown that bakery MSMEs generally face similar problems, namely manual recording, incompatibility of physical stock with records, and delays in ordering raw materials. Research by Fathoni, T., Bunajjar, K., & Permatasari, N. T. (2025) determined that the lack of information systems causes MSME owners to make purchasing decisions based on intuition, not measurable data. This has an impact on overstock and

stockouts that can harm the company. In addition, research by Andriyani, A., Idrus, M., & Idris, H. (2025) states that irregular stock recording makes it difficult to obtain inventory reports quickly when needed. This condition generally occurs in MSMEs such as Mawar Bakery & Cake Shop which still rely on manual bookkeeping so that the validity of stock data is often inaccurate.

According to Syuhardi, Y. I., & Prastomo, A. (2024), the implementation of an inventory information system not only increases stock accuracy but also provides strategic benefits such as time efficiency, ease of reporting, and increased coordination between production and purchasing departments. Research by Pholim, S., Pinandito, A., & Purnomo, W. (2023) proves that the use of computer-based information systems is able to reduce recording errors by more than 50% and increase the efficiency of the daily stock checking process. The information system also supports the application of inventory control methods such as Economic Order Quantity (EOQ) and Reorder Point (ROP) introduced by Wilson. The EOQ and ROP methods have been proven to help determine the number of economical orders and when orders should be placed, so that MSMEs can reduce storage costs and avoid delays in raw materials. The implementation of this method in other bakery businesses in the study of Sitompul, S., & Gunawan, G. (2022) resulted in a reduction in inventory costs of up to 25%.

However, the literature also notes a number of obstacles experienced by MSMEs in adopting inventory information systems. According to Simbolon, M., & Herawati, I. D. (2025), limited human resources, lack of technological knowledge, and implementation costs are the main obstacles to the implementation of information systems on a small business scale. Research by Hutabarat, N. C., & Firdaus, R. (2024) added that resistance to change also often arises from owners or employees who are used to doing manual recording. Therefore, the implementation of information systems needs to be accompanied by training and the preparation of clear SOPs, so that the transition from manual methods to computerized systems can run effectively (Gusty, Wulandari, et al., 2025).

Based on various expert views and previous research, it can be concluded that the inventory information system has an important role in improving operational efficiency and recording accuracy in bakery MSMEs such as Mawar Bakery & Cake Shop. The use of an integrated system allows business owners to obtain stock information quickly and accurately, reduce waste of raw materials, and support more objective decision-making. In addition, the implementation of control methods such as EOQ and ROP further strengthens the effectiveness of inventory management. Although there are obstacles in the aspect of human resources and work habits, the literature shows that the benefits of implementation such as inventory information are much greater than the challenges, so it is very relevant and important to be applied to MSMEs who want to improve their operational performance.

RESEARCH METHODS

Types of Research

This study uses a descriptive qualitative approach to describe phenomena naturally according to actual conditions

Research Location

The research location is at: MSME Mawar Bakery & Cake Shop, Setia Budi Branch, Medan

Data Source

The source of this data was obtained from a direct interview with Neola Neyzra (Naya) as an employee of the SPG (Sales Promotion Girl) section.

Data Analyst

Referring to the Miles & Huberman method (2014)

1. Data reduction
2. Data presentation
3. Conclusion drawing

RESULT AND DISCUSSION

Mawar Bakery & Cake Shop is one of the famous bakeries and cakes in Medan City known for the slogan "Fresh From The Oven". The business was first established on February 8, 2003, with the main store located at Jalan Pinang Baris No. 261 Medan. Along with the increasing demand and public trust in product quality, Mawar Bakery began to develop its business by opening a number of branches in various areas in Medan, one of which is on Jalan Setia Budi, Medan Selayang. This branch is one of the strategic outlets because it is located in a crowded area, close to the center of community activities such as schools, offices, and settlements.

Mawar Bakery started as a home-based business that only produces wet bread and simple sponges. As demand increases, owners add types of products such as:

1. Black forest
2. Bika ambon
3. Banana sponge
4. Birthday cake
5. Wet bread and sweet bread

Stable customer demand has led the business to grow from one small store to several branches. Each branch is managed to similar standards so that customers still feel the uniformity of quality.

The Mawar Bakery & Cake Shop outlet on Jalan Setia Budi not only functions as a place of sale, but also has its own production area that ensures that all products sold are always fresh, hygienic, and of high quality. The main principle held by Mawar Bakery is to maintain the taste, cleanliness, and halal nature of the product without using preservatives. All products are made in limited quantities every day to ensure the quality of freshness. So that owners are able to take advantage of data from daily sales to find out the types of products that are most in demand and determine the next promotion strategy. And for the marketing itself is carried out through offline stores, online sales, as well as the GoFood, GrabFood applications, and WhatsApp and Instagram orders. The organizational structure of these MSMEs consists of:

1. Owner/manager - key decision-makers
2. Production division - responsible for the processing of raw materials into final products
3. Inventory division - organize material stock
4. Cashier - handling transactions
5. SPG - promotion, customer service, and inter-branch communication
6. Finance division - manages daily transaction and expense reports

Along with the times and the increasing need for business management, Mawar Bakery & Cake Shop has also implemented a Management Information System (SIM) in its operational activities. This system is used to help the process of recording sales data, managing human resources, setting production schedules, and supervising financial and employee performance. With a driver's license, the management can monitor operational activities more effectively and efficiently. Data from each outlet, including the Jalan Setia Budi outlet, can be integrated into the center, so that the decision-making process can be

carried out faster and more accurately.

The use of this management information system also supports Mawar Bakery in analyzing sales trends and consumer preferences. Through the recorded data, management can find out which products are most in demand by customers and adjust marketing or production strategies. In addition, the system helps to minimize manual errors in transaction recording and speed up the financial reporting process.

The vision of Mawar Bakery is to become one of the best bakery manufacturers in North Sumatra that is able to provide quality products and the best service for customers. In achieving this vision, Mawar Bakery continues to innovate, not only in its products but also in its business management system. Through the application of management information systems, this business is able to adapt to technological developments and maintain stable business performance in the midst of increasingly fierce competition in the bakery industry.

Overall, the Mawar Bakery & Cake Shop outlet on Jalan Setia Budi is one of the important branches that plays a role in strengthening the Mawar Bakery brand in Medan City. With a combination of quality taste, friendly service, and modern information technology support, Mawar Bakery has managed to maintain its existence as a trusted, innovative, and professional local bakery and cake shop in its business management

Implementation of Information Systems that Are Already Running

a. Use of POS (Point of Sale)

In an organization, the existence of an integrated system between humans and technology is very important to support operational continuity and effective decision-making. By using the system, organizations are able to obtain relevant, accurate, and timely data, so that the decisions taken can be more efficient, responsive, and in line with the business goals that have been set. Gordon B. Davis, emphasized that information systems are not just technological devices, but an integrated mechanism that connects human and machine aspects in supporting all organizational functions as a whole, Gordon B Davis in (Prabowo, 2022). The implementation of the Management Information System (SIM) at Mawar Bakery & Cake Shop is still limited to certain aspects. One of the most tangible forms of digital implementation is Point of Sale (POS) at the checkout. This system automatically records sales transactions, including product type, amount, price, and payment methods (cash, debit, transfer, or e-wallets such as OVO and QRIS).

At the cashier, Mawar Bakery has used a digital POS application that can:

1. Record transactions automatically,
2. record the type of product, quantity, and price,
3. detect payment methods (QRIS, transfer, e-wallet, debit, cash),
4. Connecting transactions with receipt printers,
5. provide daily sales data.

Through the POS system, sales reports can be obtained quickly and accurately. Daily transaction data is also stored digitally, making it easily accessible to management for revenue analysis and decision-making (Gusty, Siregar, et al., 2025). This is in accordance with the results of the interview which stated that all customer transactions have been handled using digital POS. The benefits of this POS when applied:

1. Reduce manual logging errors
2. Simplify daily reporting and transaction monitoring.
3. Speed up the checkout process.

4. Provides real-time data on best-selling products.

However, the disadvantage of the POS at Mawar Bakery & Cake Shop is that it is only used at the checkout point and is not connected to:

1. Raw material stock,
2. Finished product stock,
3. Production flow,
4. Warehouse division.

As a result, sales data doesn't automatically update inventory data. Warehouse employees still have to do manual checks every day.

In addition to the POS system, Mawar Bakery also utilizes digital platforms such as WhatsApp Group for communication between divisions. Although not a formal management system, this digital communication helps to speed up coordination between departments, for example in material stock updates, order confirmations, and quick report delivery.

However, integration between systems has not been optimal. The stock and production sections are still manually recorded in the daily report book, so information from the warehouse is not automatically synchronized with sales data. This condition shows that the implementation of SIM at Mawar Bakery is only limited to the initial stage of digitalization, not yet at the stage of system integration between divisions.

b. Manual Raw Material Inventory System

Information technology is very important for companies (Satryawati et al., 2022). Information technology and information systems help companies in handling increasingly large amounts of data quickly, reliably and efficiently and help minimize errors that occur due to human error by providing business process automation (Ningsih, 2018). In this case, information technology must provide appropriate and accurate information to assist the management in making decisions. The prolonged economic crisis has resulted in competition between companies becoming increasingly fierce (Batubara et al., 2022). Efforts to reduce production costs can be done by reducing the total cost of raw material inventory to the lowest possible level, including order costs, storage costs, and losses due to loss or damage to raw materials.

The raw material stock recording system at Mawar Bakery still uses a manual method. Every material taken from the warehouse is recorded by the officer in a stock book, then recapped at the end of each day and handed over to the administration. Based on the interview, the warehouse staff performs the following stages:

1. Physical check of all materials daily.
2. Records the reduction of materials when materials are picked up by the production part.
3. Send stock reports via group chat to management.
4. Record stock in a notebook, not a digital system.

It does not have an automatic warning system when stock is low.

This process takes quite a long time and has several main drawbacks:

1. Human error – for example, forgetting to record the intake of materials or writing the wrong amount.
2. Report delay – because new data is compiled after production is completed, managers cannot monitor stock directly.
3. Absence of an automatic warning system – if the material is running low on stock, the purchasing department only finds out after the daily report is received.

Since everything is still done manually, it often happens:

1. stock difference,
2. delay in reporting,
3. the production process is disrupted due to running out of materials,
4. Management has difficulty predicting the next purchase needs.

In the interview, it was stated that warehouse staff often feel worried about taking wrong notes because there is no digital system that validates the data.

c. Examples of Real Cases

1. The eggs suddenly ran out because the staff forgot the input of the pick-up from the warehouse.
2. The flour is only ordered after it has been very thin because there is no automatic notification.
3. The production of banana sponge was delayed because the supporting material was not recorded that it had been previously taken.

The impact of this manual system is that it is difficult for management to analyze raw material needs, especially when there is a seasonal surge in demand. In addition, manual reports do not present historical data that can be used to evaluate the efficiency of material use.

The implementation of a cloud-based digital inventory system can be a solution to this problem. With this system, stock data can be updated automatically every time materials enter and exit, and can be accessed by all parts in real-time. This will reduce the risk of production delays and improve the accuracy of material purchase planning.

d. Problem Analysis Based on Interviews

From the results of observations and interviews, the main problem faced by Mawar Bakery & Cake Shop is the imbalance between the digital parts and the manual parts. The POS system at the checkout has helped digitize transactions and finances, but the management of raw material stocks still relies on manual methods.

1. Stock Constraints

The biggest obstacle that arises from interviews is the inaccuracy of stock data. This makes it difficult for management to predict the need for raw materials. This arises because manual recording tends to:

1. Prone to human errors.
2. depending on one person of staff,
3. cannot be updated automatically.

2. Inter-divisional misinformation

Since communication is done through WhatsApp Groups, no system will:

1. integrating inventory data with production,
2. linking sales reports with product stock,
3. Displays stock status to all divisions in real-time.

As a result, misinformation such as

1. production thinks the stock is safe even though it is running low,
2. SPG provides inconsistent promotional information between branches,
3. management has to wait for manual reports every night.

3. HR Challenges

From interviews, a number of employees, especially the warehouse and production departments, admitted:

1. fear of using the wrong digital system,
 2. have not understood how to input data,
 3. more convenient to use manual recording,
 4. takes longer to transition.
 5. They also feel stressed when they have to learn a new system without intensive training.
4. Impact on Operational Quality Direct impacts that arise:
1. production stops abruptly because materials run out,
 2. delay in customer orders,
 3. management cannot make quick decisions,
 4. There is a risk of wasting raw materials because there are no accurate entry and exit records.

5. Daily Work Pattern Analysis

The daily work pattern at Mawar Bakery shows:

1. reports are made nightly, not real-time,
2. the responsibility of recording still rests on one staff,
3. Stock checking routine takes a long time,
4. Financial statements and production statements are not connected.

This work model will become more problematic as the business grows and the production volume increases. This gap leads to data missynchronization between divisions, resulting in a slow decision-making process. For example, when sales increase sharply on weekends, the production department is not always ready because it does not know the current stock condition accurately.

In addition, some employees still have a low level of digital literacy, so there is a fear of using the new system. This slows down the digital transformation process within the organization. In addition, when managers implement information systems, they can choose obstacles where managers must unite perceptions, understand the character of employees to the way of thinking of each business manager.

In order for the management process to run more efficiently, Mawar Bakery needs to:

1. Integrating POS systems with digital inventory systems,
2. Provide basic technology training for all employees,
3. Conducting periodic evaluations of the effectiveness of the new system, as well as
4. Developing digital-based SOPs (Standard Operating Procedures) so that the work process is more directed.

If these measures are implemented, Mawar Bakery can improve its efficiency, accuracy, and competitiveness in an increasingly competitive digital market.

e. Problem Analysis Based on TAM (Technology Acceptance Model) Theory

The TAM (Technology Acceptance Model) theory emphasizes that technology acceptance is influenced by two main factors:

1. Perceived Usefulness (PU)
2. Perceived Ease of Use (PEOU)

Perception of Benefits (PU)

From interviews, some employees have realized that digital systems:

1. speed up the work process,
2. increase efficiency,
3. reduce errors,
4. Make the report neater.

However, some employees do not understand the long-term benefits such as:

1. improved data accuracy,
2. the convenience of monthly recaps,
3. inter-division integration.

Perception of Ease (PEOU)

This lowers their interest in accepting new technologies. Warehouse and production employees feel:

1. Fear of the wrong input.
2. worried that the system is too complicated,
3. It takes a long time to learn.

Attitude Towards Technology

Employee attitudes are influenced by:

1. age
2. experience using digital applications,
3. willingness to learn,
4. organizational culture that is not yet fully digital.

Behavioral Intention

Employees' intentions to use digital systems are quite low because:

1. there is no easy-to-use integrated system yet,
2. there is no intensive training,
3. The habit of using notebooks is still strong.

External Factors

According to TAM, external factors such as the work environment and management policies greatly influence. Currently, there are:

1. Digital SOPs,
2. reward and punishment digital,
3. standardization of data input.

Thus, the implementation of a digital inventory system must be accompanied by training and adaptation of organizational culture.

f. Inventory Information System Development Strategy

1. System Planning

The system must have the following features:

1. automatic stock entry-exit recording,
2. integration with POS,
3. Automated daily reports,
4. multi-user access,
5. Critical Materials Monitoring Dashboard.

2. Need for computer/laptop devices in the warehouse,

1. barcode scanner,
2. software inventory,
3. WiFi network is stable.

3. Employee Training

Training should include:

1. how to input data,
2. simulation of application usage,
3. how to read digital reports,
4. troubleshooting dasar.

4. Estimated Cost Common costs include:

1. purchase of software (monthly subscription),
2. training,

3. device
4. Monthly maintenance.
5. System Adaptation Strategy
 1. trial phase 1–2 months,
 2. senior staff assistance,
 3. daily evaluation,
 4. revised SOP.
6. 6-Month Implementation Roadmap
 1. Months 1–2: Training & Trial
 2. Months 3–4: Full implementation
 3. Month 5: Evaluation
 4. 6 months: full integration with POS.

CONCLUSIONS

Based on the results of the research conducted, it can be concluded that the Management Information System has an important role in supporting managerial and operational activities at Mawar Bakery & Cake Shop, especially in the aspects of sales, finance, and coordination between departments. The implementation of the POS (Point of Sale) system has helped speed up the transaction process and digital financial reporting, thereby reducing the potential for human error and improving data accuracy. However, the system is not yet fully integrated with the stock and production departments, which still use manual logging. This causes delays in stock reporting and data mismatches between the production department and the cashier. In addition, the low level of digital literacy of some employees is also a major obstacle in the digital transformation process. From a managerial perspective, the implementation of SIM has been proven to be able to provide a clearer picture in business decision-making, especially related to production planning and financial management. However, development steps are needed to achieve a fully integrated system so that business management can run more efficiently, effectively, and adaptively to technological developments. This is in line with the theory of Porter & Millar (1985) *that the application of information technology can provide a sustainable competitive advantage for companies.*

REFERENCES

- Andriyani, A., Idrus, M., & Idris, H. (2025). Analysis Of Inventory Recording Of Incoming And Outgoing Goods In The Mixed Goods Wholesale Business Of Hj Bau Stores. *Journal of Accounting AKTIVA*, 6(1), 1-11.
- Andy, Fahryza Andy Maulana & Suyud Widiono. (2024). Technological Innovation in Sales Management: A Web-Based Point of Sales Application for SMEs. *INFORMATEK Journal of Informatics, Management, and Technology*, 26(2), 161-174.
- Davis, F. D. (1989). Technology Acceptance Model (TAM) In Indonesia. *Student Journal of Management, Business, Entrepreneurship*, 4(1), 48– 61.
- Fadhil, Aqilah Al Afif, et al. (2023). Designing a Web-Based Inventory Management Information System at CV. Prosperous Palopo. *Scientific Journal of Information Systems, Information Technology and Computer Systems*, 18(2), 227-240.
- Fathoni, T., Bunajjar, K., & Permatasari, N. T. (2025). Analysis Of Sales Data And Purchasing Patterns Through A Web-Based Information System For Marketing

- Strategies (Case Study Of MSMES In Serang Regency). *Journal of Communication*, 3(8), 412-425.
- Gusty, R., Siregar, I. N. D., Syahlina, M., Hasibuan, E. R., & Purba, R. H. K. (2025). Digital Regulatory Communication And Youth Participation In Indonesia's Digital Economy. *Jurnal Ilmu Komunikasi*.
- Gusty, R., Wulandari, P., Ira Nur Dewita Siregar, Dyah Seruni Rizqiana, & Dita Kartika Sari Hasibuan. (2025). Interactive Marketing Communication through Live Commerce: A Pathway to Consumer Loyalty. *International Journal of Economics and Management Research*, 4(1), 604–615. <https://doi.org/10.55606/ijemr.v4i1.454>
- Haryanto, Hery & Badra Maitri. (2024). Implementation of Raw Material Inventory Control in Moon Cafe MSMEs. *Community Empowerment: Journal of Social Action*, 1(4), 95- 103.
- Heizer, J., & Render, B. (2020). Operations Management. Pearson.
- Rahayu, W. ., & Veri, J. (2025). The Application of Digital-Based Management Information Systems in MSMEs: A Literature Review. *Journal Of Human And Education (JAHE)*, 5(2), 267–272.
- Naldi, S., Gusty, R., & Saqdiyah, F. (2025). Digital transformation and innovation management: A systematic literature review. *Jurnal Bisnis Mahasiswa*, 5(5), 2589–2602. <https://doi.org/10.60036/jbm.855>
- Novitasari, S., Roshadi, N. Z., & Ayuningtiyas, T. D. (2025). The Role Of Management Information Systems In Encouraging The Efficiency Of Operational Activities In Msmes In Indonesia. *JIMBIEN: STUDENT JOURNAL OF MANAGEMENT, BUSINESS, ENTREPRENEURSHIP*, 4(1), 48-61.
- Andy, F. A. M., & Widiono, S. (2024). Technological Innovation in Sales Management: Web-Based Point of Sales Application for MSMEs. *Informatics*, 26(2), 161–174.
- Lijuan, C., Bhaumik, A., Xinfeng, W., & Jingwen, W. (2023). The Effects Of Inventory Management On Business Efficiency. *International Journal For Multidisciplinary Research*, 5(4), 1-17.
- Hutabarat, N. C., & Firdaus, R. (2024). Digital Transformation of Accounting: Adaptation or Slippage. *Journal of Intellectual and Scholars of the Archipelago*, 1(6).
- Indah, N. M. (2022). Goods Inventory Accounting Information System Using the Fifo Method (Case Study: MSMEs All-Purpose Taman Rejo). *Journal of Data Science*, 2(9).
- Indriyani, F., & Irfiani, E. (2019). Clustering Sales Data at Outdoor Supply Stores Using the K-Means Method. *JUITA: Journal of Informatics*, 7(2), 109-113.
- Irawati, T., Rimawati, E., & Pramesti, N. A. (2019). The Use of the Technology Acceptance Model (TAM) Method in the Analysis of the Alista Information System (Application of Logistic and Supply Telkom Akses). *@ is The Best: Accounting Information Systems and Information Technology Business Enterprise*, 4(2), 106-

120.

- Junaidi, M. (2024, November 4). *Great Msmes, National Economy Serina Journal of Economics and Business*, 2(1), 51-58.
- Laudon, K & Laudon, J. (2020). *Management Information Systems*. Pearson.\
- Lijuan, Chen, et al. (2023). The Effects of Inventory Management on Business Efficiency.
- MASRI, F. R. (2023). *Analysis Of The Inventory Strategy Of Raw Materials For Chokato Business Production In Payakumbuh City For Smooth Production According To Sharia Economics* (Doctoral dissertation, Sultan Syarif Kasim State Islamic University, Riau).
- Marose Bakery Official Website. (2021). Company Profile. <http://mawarbakery.com/about-us/>,
- McLeod, R. (2018). Management Information Systems. Medium (Msme) Jazid Bastomi Batik In Purworejo. *Jurnal JESKaPe, INCREASE*. Accessed at 4 November 2025.
- Nadia, N. (2024). The Effectiveness Of Management Information Systems In Encouraging Operational Efficiency Towards Retrieval
- Nastiti, Heni & et al. (2024). Analysis Of Wheat Flour Control With An Economic Order Quantity Approach In Hankeikeu MsmeS.
- Nursumaryanti, RC Esti. (2023, January 1). Production Raw Material Inventory Information System At Pt. Cofee Black Gallery Jakarta. *JOURNAL OF INFORMATION ENGINEERING SWADHARMA (JRIS)*, 3(1), 52-60
- O'Brien, J. (2017). Management Information Systems.
- Pholim, S., Pinandito, A., & Purnomo, W. (2023). Study on the Implementation of Web Application-based Information Systems on Reducing the Number of Error Rates in the Printing Company Activity Recording Process. *Journal of Information Technology and Computer Science Development*, 7(4), 2038-2045.
- Rahmadhan, Novensi Dara, et al. (2025). The Role Of Management Information Systems In Encouraging The Efficiency Of Operational Activities In Memes Ritonga, Ryan Kurniawan & Rayyan Firdaus. (2024). THE IMPORTANCE OF MANAGEMENT INFORMATION SYSTEMS IN DIGITAL. *JICN: Journal of Intellectual and Scholars of the Archipelago*, 1(3),4353-4358.
- Romney, M. & Steinbart, P. (2018). *Accounting Information Systems*. Pearson.
- Seftyananta, R., Shalshabilla, I., Rachmawan, R. A., & Susilo, D. E. (2024). Analysis of the Role of Information Systems in Increasing the Effectiveness of Controlling Merchandise Inventory at PT. Mayora Indah Tbk. *Journal of Accounting Information Systems (JASIKA)*, 4(2), 74-82.
- Simbolon, M., & Herawati, I. D. (2025). Experience of SME Entrepreneurs in Adopting Cloud-

Based Accounting Information Systems: A Qualitative Perspective. *Journal of Civilization Balance*, 5(1), 7-22.

Sitompul, S., & Gunawan, G. (2022). The relationship between operational cost expenditure, inventory turnover and revenue to Increase Or Decrease Profitability at PT. Global Agri Sejahtera. *Scientific Journal of METADATA*, 4(1), 301-315.

Syahputra, A., Wiranti, R., & Astita, W. A. W. (2022). The Role Of Organizational Management Information Systems In Decision-Making. *Journal of Information Systems Management (JMASIF)*, 1(1), 26-31.

Syuhardi, Y. I., & Prastomo, A. (2024). Development of a goods inventory system at PT Alpha Romeo Teknologi to realize operational efficiency through innovation. *Journal of Information Systems, Informatics and Computing*, 8(2), 296-305.

Tanjung, Putri Paramadina & Ali Ikhwan. (2024). Bread Inventory Management Information System Applies the First In First Out (FIFO) Method. *Scientific Studies of Informatics and Computers*, 4(3), 1531-1538.

Wijoyo, hadion, et al. (2021). *Management Information System*. Solok: INSAN CENDEKIA MANDIRI