

Analysis of The Use of IPOS 4 System For Integration Of Stock Reports and Accounting In Tobacco SME In Kediri

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ABSTRACT

In the era of rapid digitalization, the adoption of information technology has become a basic need in business management, including in the Micro, Small, and Medium Enterprises (MSMEs) sector. Although MSMEs contribute greatly to the national economy, many of them still use manual systems in stock management and accounting, which have the potential to cause data inconsistencies and hinder strategic decision making. This study aims to analyze the effectiveness of the use of an information system based on the IPOS 4.0 application in integrating stock and accounting reports at the Jamsbacco tobacco MSME in Kediri Regency. With a descriptive approach and case study, this study compares the manual system with the IPOS 4.0 digital system in improving the accuracy, efficiency, and transparency of financial reports and stock management. The results of the study indicate that the implementation of IPOS 4.0 provides significant changes in operational efficiency and recording accuracy, with reduced recording errors and better reporting timeliness. This study provides an important contribution to the development of MSME business practices and enriches the literature related to the adoption of information technology in the MSME sector in developing areas. These findings are also expected to be a guide for other MSMEs in implementing digital systems to improve business competitiveness and transparency.

Keywords: Accounting; Digitalization; IPOS 4.0; Information System; UMKM.

1. INTRODUCTION

In the era of rapidly developing digitalization, the adoption of information technology has become a basic need in every aspect of economic activity, including in the management of business and business. The development of technology is no longer limited to the machinery and manufacturing sectors alone, but has penetrated the digital realm and information systems which are now key elements in increasing managerial efficiency and effectiveness, including in the fields of accounting and inventory management. (Laely & Lidiawan, 2024; Lidiawan, 2024). One of the strategic sectors that is starting to be affected by the digitalization flow is Micro, Small, and Medium Enterprises (MSMEs) (Indrasari et al., 2022; Laely, Lidiawawan, et al., 2024; Wu et al., 2025). MSMEs have a major contribution to the national economy through job creation and improving the local economy. (Komari, 2023). However, there are still many MSMEs that have not optimally adopted accounting information system technology, which results in low accuracy and speed in preparing financial reports and controlling stock of goods. (Laely, Lidiawan, et al., 2024).

Jamsbacco UMKM in Kediri Regency is a concrete example of this reality. (Atuegwu et al., 2023; Puspita et al., 2021; Syakbania & Wahyuningsih, 2017). Although it has been operating since 2019 and has a fairly good market segmentation in the tobacco sector with various product variants, the recording system used is still manual. This condition often causes a mismatch between report data and the physical condition of stock in the warehouse, and risks causing errors in financial recording. This inaccuracy has an impact on the strategic decision-making process by business owners. The implementation of an application-based information system such as IPOS 4.0, which provides integration between purchasing, sales, financial reporting, and stock management processes, is an alternative solution that is worthy of further research. With user-friendly, flexible, and Android-based mobile features, IPOS 4.0 has great potential to improve work accuracy and efficiency in the MSME environment.

Therefore, this research is important and urgent to be conducted in order to analyze how the IPOS 4.0 system can be implemented effectively in MSMEs, especially in integrating stock and accounting reports. This research not only provides real contributions to the development of business practices in the MSME sector, but also enriches the literature

related to the application of information technology in micro and small-scale business governance, especially in the context of developing areas such as Kediri Regency.

Although industrial robots drive efficiency and sustainability, MSMEs still do not fully understand the benefits of digital systems such as IPOS 4. In fact, this information system can help record production efficiency in real time. Low adoption shows the need for information technology education in the MSME sector. (Chen et al., 2024). The use of AI has been proven to strengthen energy resilience, but the application of similar technologies such as IPOS 4 among MSMEs is still very limited. Lack of understanding of the potential of IPOS 4 in energy financial management is an obstacle. This system can actually be a tool in micro energy strategies and transparent recording (Xu, 2025). T2A reform emphasizes the importance of information systems in financing efficiency, but MSMEs are still not dominant in implementing applications such as IPOS 4. Ignorance of the function of IPOS 4 as a cost recording and analysis system hinders the optimization of local financing. An intensive training approach is needed so that this system is widely known. (Armoiry et al., 2024). Small school leadership faces challenges in resource management, where systems such as IPOS 4 can help. However, there has been no significant implementation of IPOS 4 in small-scale school environments due to limited understanding and training. Strengthening digital capacity is the first step to adapting information systems. (Kim et al., 2024).

Although the IPOS 4 Information System offers great potential in increasing the efficiency and accuracy of financial recording, its adoption rate among MSMEs is still very low. (Siswanto & Romadon, 2021). These findings indicate a gap in understanding and application of information technology, especially in terms of digital literacy. This gap is a major challenge in driving digital transformation in the MSME sector, which actually really needs an integrated system for stock and financial management. Without the right intervention—such as regular training, technical assistance, and development of a more user-friendly application interface—IPOS 4 is at risk of not being utilized optimally by MSME players. Therefore, accelerating the adoption of IPOS 4 is a strategic and urgent step to strengthen the competitiveness of MSMEs through affordable and integrated digitalization of information systems.

Micro, Small, and Medium Enterprises (MSMEs) have a significant contribution to gross domestic product (GDP) and employment absorption in Indonesia. However, most MSMEs still use manual recording systems, which are prone to data inconsistencies, business process inefficiencies, and lack of transparency and accountability in financial and inventory management. Limitations in manual recording often cause mismatches between accounting reports and physical stock conditions, and have an impact on the low quality of financial information. This hampers the process of evaluating business performance quantitatively and reduces the credibility of reports for internal and external parties. Android-based information system applications such as IPOS 4.0 provide integrated features that cover the processes of purchasing, selling, stock management, and financial reporting. IPOS 4.0 has the potential to improve operational efficiency, data accuracy, and ease of access and use for MSME actors. However, in-depth scientific studies on the effectiveness of using IPOS 4.0 in integrating stock and accounting reports in MSMEs in Indonesia are still limited.

This study aims to analyze the effectiveness of the use of the IPOS 4 system in integrating stock and accounting reports in tobacco MSMEs in Kediri, with a case study on Jamsbacco MSMEs. The main focus of the study is to evaluate the extent to which IPOS 4 can improve operational efficiency, recording accuracy, and reliability of financial reporting compared to manual methods. This study also identifies challenges and opportunities in the process of digitizing accounting information systems in the local commodity-based MSME sector. Theoretically, this study expands the literature on accounting information systems and information technology adoption by considering the unique context of tobacco MSMEs that have limited resources and local transaction dynamics. Practically, the research findings provide a concrete picture for MSME actors about the benefits of IPOS 4 as an integrated digital recording solution. The results of this research can be used as a guide for business owners and supporting institutions in improving the accuracy of financial reports and designing relevant digital training strategies.

2. RESEARCH METHODS

The research stage begins with a research design that aims to describe the stock reporting and accounting process at Jamsbacco MSMEs. This design uses a descriptive approach with a case study method, where researchers will explore and describe in detail how the MSME manages stock and accounting in its operational activities. The focus of this study is to analyze the significant differences between the manual system used previously and the newly adopted digital system based on the iPos 4.0 FE application. This research design allows researchers to describe the real conditions that occur in the field without intervening in the process, so that the results obtained better reflect the actual situation.

The selection of informants in this study involved business owners and staff who play a direct role in the implementation of stock reporting and accounting at Jamsbacco UMKM. The selection of informants who are directly involved allows researchers to obtain more valid and representative data on how these activities are carried out every day. Business owners are the main source of information on business management strategies, while staff involved in

daily operations provide deeper insights into the practice of recording stock and financial transactions carried out. Interviews with informants were conducted to explore their experiences related to the challenges and benefits felt with the existing system, both manual and application-based.

Data collection was conducted through several methods, including direct observation of the stock reporting and accounting process carried out by UMKM Jamsbacco. Researchers observed stock recording using ledgers and columnar sheets of paper, as well as other manual methods used to summarize sales, purchases, and expenditure transactions. In addition, data was also obtained through interviews with informants, who provided information about the obstacles faced in using manual methods and their expectations for a more efficient system. In addition to observation and interviews, document analysis in the form of financial and stock reports was also carried out to obtain a clearer picture of the existing financial flow and inventory.

After the data is collected, the analysis stage is carried out by comparing the manual process with the digital system based on the iPos 4.0 FE application. The researcher analyzed the effectiveness of using this application in overcoming the problems faced by Jamsbacco MSMEs, such as recording errors, unpunctuality, and difficulty in making complete reports. The implemented iPos 4.0 FE system allows automatic recording of stock and transactions, which are directly connected to changes in stock quantities and cash balances. Data collected through this application is more structured, processed faster, and easier to analyze. Data analysis involves measuring the effectiveness of both systems based on several indicators, such as timeliness, accuracy, efficiency, and the ability to provide more complete and timely reports.

Finally, the results of this data analysis are used to provide conclusions about how the adoption of information technology affects the efficiency and effectiveness of the stock reporting and accounting process in Jamsbacco MSMEs. Researchers will assess whether the digital system brings significant changes in improving operational performance and business decision making. In addition, this analysis also aims to identify potential challenges still faced by MSMEs in the transition from manual to digital systems, as well as provide recommendations for optimizing the use of the iPos 4.0 FE application in improving stock management and accounting that is more professional and adaptive to digital developments.

2.1 Conceptual Framework

The concept of conceptual framework in this study aims to describe the relationship between variables involved in stock management and accounting in MSME Jamsbacco, with a focus on the comparison between manual systems and digital systems based on the iPos 4.0 FE application. This conceptual framework is designed to identify and describe key variables that influence the effectiveness of stock management and accounting in the context of MSMEs, as well as the relationship between these variables.

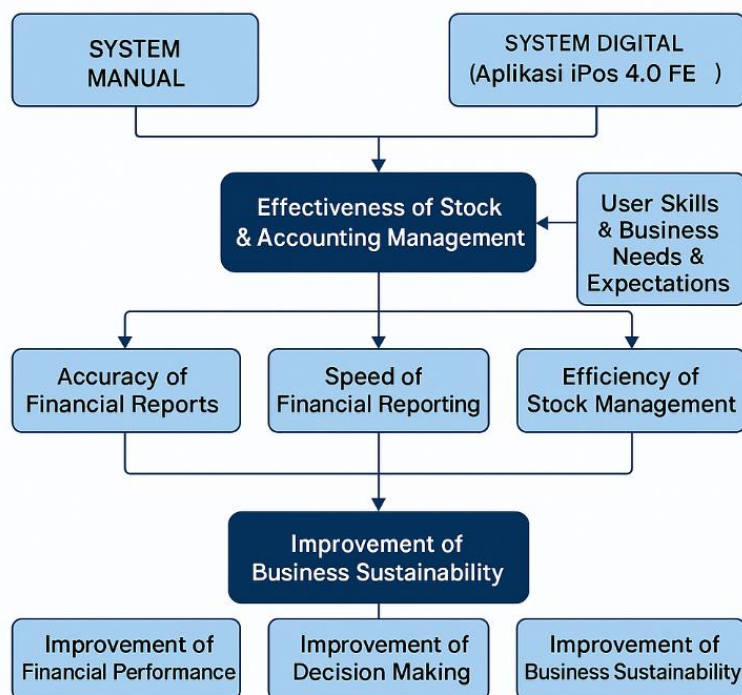


Figure1. Conceptual Framework

2.1.1. Stock Reporting and Accounting System Variables (Independent Variables)

a. Manual System:

This variable describes the process of stock reporting and accounting that uses traditional methods, such as recording using ledgers and columnar sheets of paper. (Kumar & Sopariwala, 2016; Sholihin & Fitriyana, 2024). In this case, MSMEs perform manual recording of sales, purchasing, and goods and cash expenditure transactions which often take longer, are prone to errors, and make it difficult to produce timely and accurate reports.

b. Digital System (iPos 4.0 FE Application):

This variable describes the implementation of a digital system based on the iPos 4.0 FE application for automatic stock recording and accounting. (Ardiyanti et al., 2023; Kantun et al., 2020). This application allows transactions and stock changes to be recorded in real-time, and produces faster and more accurate financial reports, which in turn can improve the efficiency and effectiveness of stock management and accounting.

2.1.2. Variables of Effectiveness of Stock Management and Accounting (Dependent Variables)

a. Accountability and Accuracy of Financial Reports:

The use of a more structured and automated system (digital system) is expected to increase the accuracy of the financial reports produced. (Laely & Lidiawan, 2024; Lidiawan, 2024). In this conceptual framework, the accuracy of the report will be measured based on the conformity between the transactions that occur and the financial statements that are prepared, and whether the report is free from recording errors.

b. Speed of Preparation of Financial Reports:

The manual recording process often takes longer to prepare financial reports. (Saleem et al., 2025; Vuong et al., 2025; Xu, 2025). On the other hand, an integrated digital system is expected to speed up this process by automatically generating reports in a short time. The speed of report preparation will be one indicator of the effectiveness of the system.

c. Stock Management Efficiency:

Manual systems often have difficulty updating stock data in real time, so errors often occur in calculating the amount of stock available. (Abbas et al., 2024). Digital systems can provide more accurate and real-time stock monitoring, which will affect the efficiency of stock management. The efficiency of stock management will be measured based on the system's ability to reduce recording errors, the time required to update stock data, and the accuracy of the information available.

2.1.3. Factors Influencing the Adoption of Digital Systems

a. User Skills and Knowledge:

The use of digital systems depends on the skills and knowledge possessed by MSME owners and staff in operating the application. (Abbas et al., 2024; Djunaedi et al., 2024). If application usage skills are low, then technology adoption can be hampered and the effectiveness of using digital systems will be reduced.

b. Needs and Expectations of MSME Businesses:

Another factor that influences technology adoption is the extent to which the iPos 4.0 FE application can meet the needs of MSMEs in terms of speed and accuracy of financial reports, as well as efficiency of stock management. The higher the needs and expectations of MSME businesses for more efficient management, the more likely they are to adopt this digital system. (Multi et al., 2024; Vuong et al., 2025).

2.1.4. Consequences and Impacts of Using Digital Systems (Outcome Variables)

a. Improving MSME Financial Performance:

With the increasing accuracy and speed of financial reports through digital systems, it is expected that the financial performance of MSMEs can improve. More accurate data-based business decisions will have a positive impact on resource allocation and better financial planning. (Wu et al., 2025; Yung et al., 2020).

b. Improved Decision Making:

Digital systems that provide faster and more accurate reports will support more informed decision-making by business owners and MSME managers. This can have an impact on improving marketing strategies, stock management, and more efficient financial management. (Lidiawan et al., 2023).

c. Improving Business Sustainability:

By minimizing recording errors and increasing operational efficiency, MSMEs are expected to survive longer and grow. More efficient management will contribute to business sustainability and growth.

3. RESULTS AND DISCUSSION

3.1. Results

3.1.1. Stock Reporting and Accounting Process at Jamsbacco UMKM.

Jamsbacco UMKM still uses manual methods in managing daily stock reporting and accounting. This process is carried out conventionally without the help of computerized applications or digital accounting systems. Although this method is quite simple, business actors try to maintain orderly records so that they can continue to monitor stock and financial conditions periodically. The stock reporting process is carried out by recording daily the number of incoming goods (purchases of raw materials or products) and outgoing goods (sales or usage). Recording is done using a stock book or sheet of paper in columns divided by date, name of goods, initial quantity, incoming goods, outgoing goods, and final remainder (Table 1).

Table1. Traditional Stock Reporting Stages

Stage	Sub-Stage	Activity	Description	Devices
A. Stock Reporting	A.1. Initial Stock Recording	Physical check & write down initial stock	Done every morning before production starts	Stock book, pen, manual scales
	A.2. Recording of Incoming Goods	Record purchases of raw materials	Date, type, amount, source, note saved	Paper notes, stock books
	A.3. Recording of Outgoing Goods	Record material usage and outgoing products	Used to record raw materials used and products sold	Production/stock out book
	A.4. Ending Stock Reconciliation	Calculate daily ending stock	Ending stock = Initial Stock + In – Out	Calculator, stock book
B. Accounting Reporting	B.1. Daily Sales Record	Record all sales	Date, product, unit, price, total sales	Sales book, note
	B.2. Purchase & Expense Records	Record all expenses	Including purchase of materials, costs, etc.	Cash book, expense note
	B.3. Cash Book Updates	Calculate daily balance	Calculate cash in and out, ending balance	Cash book, calculator
	B.4. Weekly/Monthly Recapitulation	Calculate profit & performance	Total sales – total purchases = gross profit	Summary book, correction pencil

Source: Internal data from Jamsbacco UMKM

Table2. Stock Report

Date	Name of goods	Initial Stock	Incoming goods	Exit item	Final Stock
01/04/2025	Tobacco Leaves	20 kg	10 kg	5 kg	25 kg
01/04/2025	Clove	5 kg	2 kg	1 kg	6 kg
01/04/2025	Rolling Paper	1000 sheets	500 sheets	300 sheets	1200 sheets

Source: April 2025 stock report sample

The business owner recalculates the physical quantity of each production component or merchandise to ensure conformity between the records and the physical condition in the warehouse (Table 2). If there is a difference, a correction is recorded. Financial reporting is done using a ledger containing the following components:

- Cash in and cash out book.
- Daily sales book.
- Purchase book.
- Simple income statement (monthly).
- Sometimes accompanied by purchase notes and sales notes made of carbon paper or manual receipts.

Table 3. Report

Date	Information	Entry Fee (Rp)	Cash Out (Rp)	Balance (Rp)
01/04/2025	Product sales	500,000 (+)		500,000
01/04/2025	Purchase of raw materials		300,000 (-)	200,000
02/04/2025	Product sales	700,000 (+)		900,000

In this manual reporting process, UMKM Jamsbacco uses several simple tools:

- A large ledger with column lines.
- Pens and pencils.
- Manual calculator to add up daily transactions.
- File box or document folder for storing purchase/sales notes and receipts.
- Manual scales for measuring stock of materials such as tobacco and cloves.
- A wall clock or paper calendar to ensure timely daily recording.

Jamsbacco MSMEs currently still rely on manual methods in managing daily stock reporting and accounting. This process is carried out conventionally without the help of computerized applications or digital accounting systems. Although this method is relatively simple, business actors try to maintain orderly records to monitor stock and financial conditions periodically. Stock recording is done by recording the number of incoming goods (purchases of raw materials or products) and outgoing goods (sales or usage) using a stock book or columnar paper sheets divided by date, name of goods, initial quantity, incoming goods, outgoing goods, and final remainder. This reporting process includes several stages, namely recording initial stock, incoming goods, outgoing goods, and final stock reconciliation. Accounting reporting is done by recording daily sales, purchases and expenses, updating cash books, and monthly profit and performance recapitulations. All recording is done using simple devices such as ledgers, manual calculators, pens, pencils, and archive boxes to store purchase/sales notes and receipts.

However, this manual process presents several challenges. Manual recording relies heavily on human accuracy and is prone to errors, both in calculating stock and financial transactions. In addition, the manual stock reconciliation process is time-consuming and has the potential to cause inaccuracies in inventory management. Errors in recording can have a direct impact on the physical condition of goods and inaccurate financial reports. The calculation process that takes a long time also hinders the ability of entrepreneurs to make decisions quickly and accurately.

Adopting an information system in stock reporting and accounting is essential to improve efficiency and accuracy. An accounting and stock management information system can automate daily recording and reporting, which will save time and reduce human error. With a computerized system, stock recording can be done in real-time and automatically, allowing business owners to immediately detect discrepancies between records and the physical condition of goods. In addition, financial and stock reports can be produced quickly and in a structured manner, providing a clearer and more timely picture of business performance. Analysis of sales, purchasing, expenditure, and profit trends will also be easier to do, so entrepreneurs can plan more effective business strategies. Data security is also increased with a digital system, which is safer than manual archives that are prone to loss or damage.

3.1.2. Stock Reporting and Accounting Process at UMKM Jamsbacco using IPOS 4.0 FE Application.

Jamsbacco UMKM experienced a significant transformation in stock management and accounting after adopting the iPos 4.0 Full Edition application. This application replaces the manual method that was previously carried out using notebooks and paper records, so that the business process is now more efficient, accurate, and digitally integrated (Table 3).

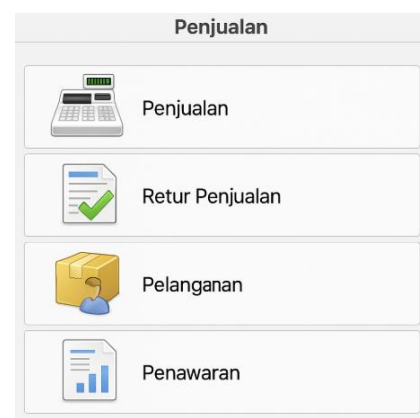
Table3. Comparison of the Use of iPos 4.0 FE with the Manual Stock Input System

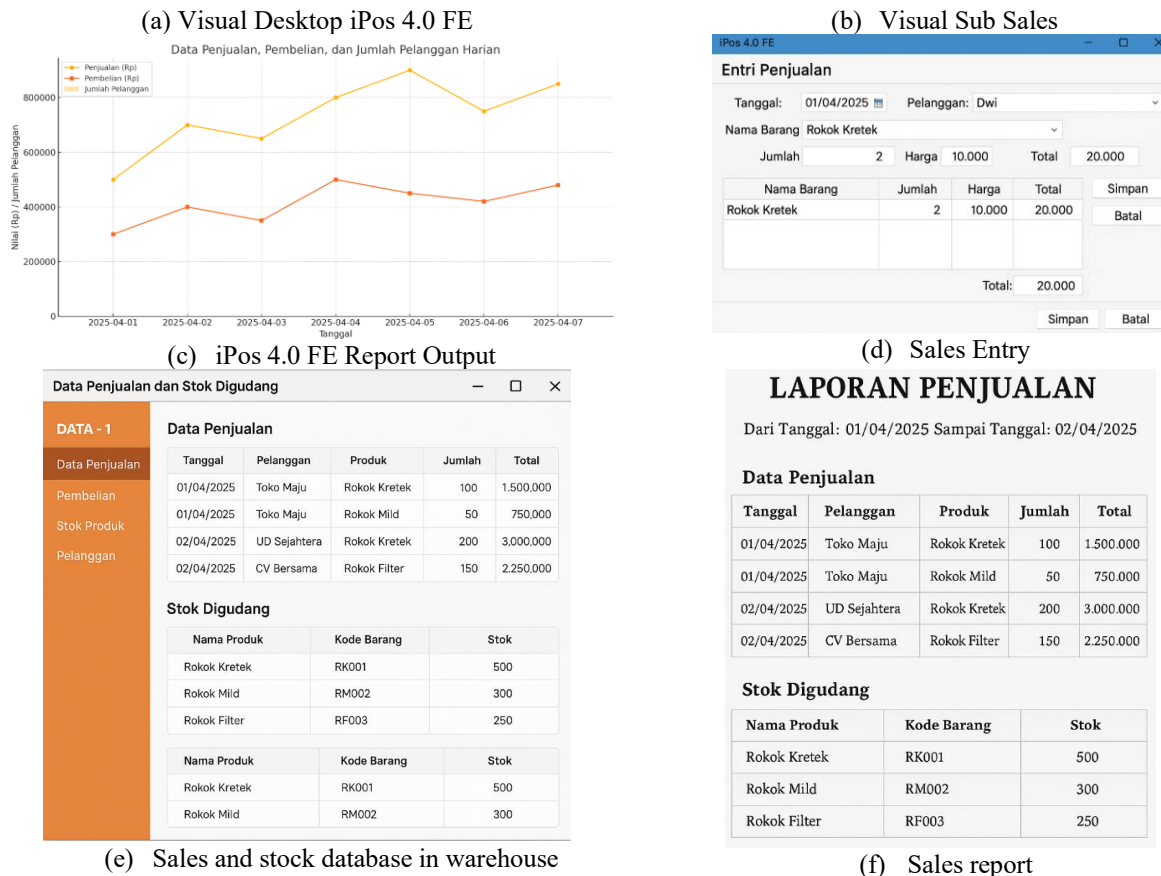
Aspect	Manual	iPos 4.0 FE
Accuracy	Prone to miscalculation	Automatic, accurate
Time Efficiency	Slow, depends on the recorder	Fast, real-time
Data Recap	Manual, sometimes incomplete	Automatic & complete
Business Analysis	Limited, own calculation	Graphs and reports provided
Risk of Data Loss	High (damaged/lost paper)	Secure digital backup
Stock Monitoring	Need regular physical checks	The system immediately displays the stock quantity

With iPos 4.0, the stock recording process is now done automatically using the inventory management feature. Business owners only need to make initial input on the amount of raw material stock such as tobacco leaves, cloves, and rolling paper into the system. Furthermore, every transaction of purchasing raw materials and selling products is directly connected to real-time stock changes. This process includes:

- Initial Stock: Entered once at the beginning of the period using the “Initial Stock of Goods” menu.
- Incoming Goods: Entered through the “Purchase Goods” module, the system will automatically increase the stock amount.
- Goods Out: Recorded when a sale occurs via “Cashier Sales” or “General Sales”, stock is automatically reduced.
- Stock Opname: Can be done periodically with the “Stock Adjustment” feature to overcome physical and digital differences.
- Sales Recording: Each sales transaction produces an automatic note and is immediately recorded in the sales book.
- Purchases and Expenses: Recorded through the “Purchase” or “Cash Expenditure” feature with details of the transaction type and nominal amount.
- Cash Book and Daily Balance: The system calculates cash balance automatically based on cash in and out.
- Income statement: Financial reports such as gross profit, operating costs, and net profit can be viewed in one click, either daily, weekly, or monthly.

Integration of iPos 4.0, UMKM Jamsbacco not only increases efficiency in recording stock and finance, but is also able to make decisions based on actual and systematic data. The business process becomes more professional, ready to compete, and able to face challenges on a larger business scale. Adopting this information system is not only a technical solution, but a long-term strategy towards a resilient and adaptive UMKM to the digital era (Figure a, b, c, d, e and f).





The use of application-based information systems such as iPos 4.0 FE brings a number of significant advantages for Jamsbacco UMKM in managing sales, purchasing, customer, and stock activities. The visuals of the iPos interface show how data can be easily inputted through a structured sales form, allowing business owners to record transactions quickly and accurately. Not only that, customer information such as name, contact, and purchase history are also well documented, supporting repeat marketing strategies and increasing customer loyalty. This process is much more efficient than manual methods that rely on notebooks and physical recording, and reduces the risk of human error.

Visualization of sales, purchase, and customer reports in graphical form makes it easy to read daily and weekly trends, so that MSME owners can make data-based decisions in real time. For example, increasing sales trends on certain days can be the basis for special promotions, while raw material purchases can be adjusted to demand fluctuations. The graphs displayed present data in an intuitive form, so it can be understood quickly without the need for complicated analysis. Integration between the stock system and financial reports also ensures that there is no mismatch between physical stock and digital reports, which was previously often a problem when recording was done manually.

In addition, the ability of iPos 4.0 to produce output in the form of neat and professional print-outs is an important added value. This report can be used as an official bookkeeping document or as a tool for monthly performance evaluation. This feature is very helpful for MSMEs who want to increase credibility in applying for loans to financial institutions or when supervised by external parties. The reports produced include transaction details, stock summaries, and simple balance sheets that are very useful for long-term business planning. Thus, the adoption of a digital information system such as iPos is not only a technological solution, but also a strategic step in managerial and accounting transformation at the MSME level.

3.2. Discussion

3.2.1. Stock Reporting and Accounting Process at Jamsbacco UMKM

This study is in line with the role of accounting and technology in the financial management of MSMEs, showing the challenges that are still faced in various regions in Indonesia. In Pontianak City, for example, most MSME actors do not yet understand the accounting process as a whole (Risal & Wulandari, 2021). They tend to do financial records simply and inconsistently, only recording transactions that are considered large. The main motivation in preparing

financial reports arises because of the need for business capital.(Nay et al., 2024).. This is where information technology, especially accounting applications, begins to show its important role as a tool that supports transparency and efficiency.(Hendra et al., 2014). A similar situation also occurred in East Nusa Tenggara (NTT), especially in the Joint Savings and Loans (UBSP) institution which plays a major role for housewives without a fixed income. The lack of financial literacy and the absence of an integrated accounting system make UBSP vulnerable to bad risks in financial management. Research by Nay et al. (2024) offers a solution through the digitization of the UBSP accounting system using the System Development Life Cycle (SDLC) approach. This system involves designing DFD, ERD, to black box testing, the results of which show that all functions are in accordance with UBSP's needs, and have even been developed into an official website that contains login features, dashboards, member records, credit applications, and financial reports. Meanwhile, in Manado City, another challenge arises in the aspect of tax compliance(Seftiany & Wijayana, 2023). A study at PT. Golden Mitra Inti Perkasa revealed that the company has not fully implemented PPh Article 23 accounting according to regulations. If the process for tax consultant services is in accordance, this does not apply to AC service services that have not been deducted and recorded according to the provisions. This evaluation shows the need to improve the understanding of tax accounting so that companies are not subject to sanctions and maintain compliance with regulations.

3.2.2. *Stock Reporting and Accounting Process at UMKM Jamsbacco using IPOS 4.0 Application.*

This study is comparable to empiricism in Digital finance is able to stabilize green finance, but MSMEs still make minimal use of IPOS 4 to support recording that is in line with sustainability principles. Unfamiliarity with using this system makes financial data not yet well structured. Education on environmental-based information systems is very necessary (Song et al., 2024). Large companies demonstrate transparency with sophisticated information systems, but MSMEs have not widely implemented IPOS 4 as a means of ESG recording. Many business actors do not yet understand that IPOS can be used for basic sustainability reporting. The potential of IPOS 4 to assist in social responsibility reporting has not been maximized (Xue et al., 2025). In developing countries, digital financial inclusion is still at risk, especially if it is not accompanied by a strong information system such as IPOS 4. Many MSMEs are not yet familiar with IPOS 4 and still rely on manual methods for recording. As a result, microfinance stability is vulnerable to errors and manipulation. (Vuong et al., 2025). The concept of financial mediation has not been supported by a digital information system that is easy to use in MSMEs. Although IPOS 4 has great potential, its adoption is still low due to the lack of digital literacy. This system could be a connecting tool between sustainable financing and environmentally friendly recording practices if it is more widely understood. (O'Connell & Schot, 2025). Research shows that the implementation of IPOS 4 in Jember MSMEs is not evenly distributed and many still do not fully understand it. Adoption of this system is highly dependent on the educational background and experience of the business owner. Low utilization reflects the need for ongoing training on information systems (Kantun et al., 2020). Although IPOS 4 has proven effective in Elmeera Outlet, this success has not become a general trend among other MSMEs. Many business actors do not yet understand how IPOS 4 can improve efficiency and reporting accuracy. Wide socialization is needed to encourage the use of information systems more dominantly (Ardiyanti et al., 2023).

4. CONCLUSION

This study shows that MSMEs in various regions in Indonesia still face significant challenges in terms of financial management and the implementation of efficient accounting systems, including in the use of information technology such as accounting applications and IPOS 4.0. Although technologies such as IPOS 4 have great potential to improve transparency and efficiency in financial reporting and support sustainability principles (ESG), their adoption among MSMEs is still low due to the lack of digital literacy and understanding of the system. The managerial implication is the importance of increasing training and education on environmental-based information systems to improve the understanding and adoption of technology in MSMEs. In addition, the role of policies that support financial and accounting literacy at the regional level is also needed to encourage better compliance and management. For further research, it is recommended to explore the factors that influence the adoption of digital accounting systems in MSMEs, as well as design a more effective training model to improve the understanding and use of this technology among small and medium entrepreneurs.

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