

The Effect of Accounting Information System Implementation on Internal Control Effectiveness in Sorong City MSMEs

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ABSTRACT

This study aims to analyze the effect of the application of Accounting Information Systems (AIS) on the effectiveness of internal control in Micro, Small and Medium Enterprises (MSMEs) in Sorong City. The background of this research is based on the need for MSMEs for a reliable financial management system and a control system that is able to minimize the risk of errors and fraud. The method used is an associative quantitative approach with multiple linear regression analysis techniques using SPSS. The population in this study were active MSME players in Sorong City, with a sample of 100 respondents selected through purposive sampling technique. The independent variables in this study consist of four dimensions of AIS, namely system reliability, ease of use, data security, and reporting accuracy. While the dependent variable is the effectiveness of internal control as measured through the five components of the COSO framework. The results showed that all AIS indicators simultaneously had a significant effect on the effectiveness of internal control. Partially, the accuracy of reporting is the dominant factor in influencing the effectiveness of internal control. The findings also highlight the importance of employee training and the role of information technology in supporting effective AIS implementation. Thus, the strategy to increase the effectiveness of MSME internal control must include strengthening information systems, increasing human resource capacity, and adaptive and sustainable digital transformation. This research provides practical implications for policy makers and MSME actors in managing more accountable financial governance.

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INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) are the backbone of the Indonesian economy because they contribute more than 60% to the Gross Domestic Product (GDP) and absorb a large number of workers (Ministry of Cooperatives and SMEs, 2023). In Sorong City, MSMEs have great potential in driving local economic development. However, most MSMEs still face obstacles in financial management, especially in the aspects of recording, reporting, and internal control. Accounting Information System (AIS) is one of the strategic solutions that MSMEs can use to manage finances efficiently and support data-based decision making (Romney & Steinbart, 2018). According to research by Putra and Susanto (2020), good AIS implementation can improve operational efficiency, financial reporting accuracy, and minimize the risk of fraud among MSMEs.

An effective internal control system is needed to ensure the reliability of financial information, regulatory compliance, and asset protection (COSO, 2017). Without adequate controls, MSMEs are

vulnerable to errors and misuse of funds. The study by Purnomo and Kartika (2019) shows that the quality of accounting information systems has a direct influence on the effectiveness of internal control in small and medium-sized companies in Yogyakarta. Handayani and Saputra's (2021) research on food sector MSMEs in South Sumatra confirmed that the effectiveness of internal control increased significantly after the use of simple application-based AIS. One of the main components of good internal control is transaction documentation and routine monitoring, which can be done automatically through modules in the AIS (Hall, 2016).

In a region like Sorong, which faces infrastructure and digitization challenges, the adoption of AIS can be a gamechanger, especially when combined with basic financial management training for MSME actors. Daryanto and Farida (2022), revealed that the main obstacle in the implementation of AIS in MSMEs is the lack of training and understanding of information technology, not merely the cost of software investment. On the other hand, strong internal control does not always require complex systems. With a simple SIA and clear SOPs, controls can be carried out consistently and have an impact (Suryaningsih & Maulana, 2020). In addition, research by Jannah and Hidayat (2023), confirms that there is a significant relationship between the use of AIS and increased transparency in the financial reporting of cooperative-assisted MSMEs in West Java.

Some international studies also support these findings. For example, research by Al Azzawi and Jasim (2022), in Iraq shows that AIS plays an important role in creating a transparent and auditable control environment in small businesses. Research by Susanti et al. (2021), states that MSMEs that have implemented AIS find it easier to meet the needs of tax reporting and financial administration, which was previously a big challenge. Sorong City as part of the Eastern Indonesia region is often left behind in the adoption of financial technology. Therefore, the study of AIS and internal control is very relevant to encourage the acceleration of digitalization of MSMEs in this region.

Government initiatives through the MSME digitization program since the COVID-19 pandemic have also become an important momentum to encourage the implementation of better information systems among small business actors (KemenkopUKM, 2021). This research is important because it will provide a mapping of the extent to which AIS contributes to strengthening the internal control of MSMEs, especially in developing cities such as Sorong. Not only that, the results of this study are expected to be used as a basis for designing training programs or government incentives to encourage MSMEs to systematically adopt accounting technology. This research can also fill the void of literature regarding the relationship between AIS and internal control in the geographical context of Eastern Indonesia which is still rarely explored in empirical studies.

The implementation of Accounting Information Systems (AIS) in MSMEs has been shown to improve the quality of financial reports, which in turn strengthens internal control. Research by Resi and Tries (2025), shows that the use of AIS makes it easier for MSMEs to prepare more accurate and reliable financial reports, thus supporting more informed decision making. However, not all studies found a positive relationship between AIS and the quality of financial statements. For example, research by Bakari et al. (2024), found that the competence of human resources (HR) has a more significant effect on the quality of financial reports than the implementation of AIS itself. On the other hand, research by Sumarsono and Syaiful (2025), revealed that AIS and the quality of financial information together have a strong effect on the performance of MSME companies in Gresik Regency. This shows that the integration of AIS and quality financial information can increase the effectiveness of internal control. Research by Lingga (2021), emphasizes the importance of internal control in accounting information systems to ensure the reliability of financial information. Effective internal control in AIS can prevent errors and fraud in financial reporting.

In the context of MSMEs in Sorong City, challenges in the implementation of AIS include limited technological infrastructure and lack of training for business actors. This can hinder the effectiveness of internal control even though AIS has been implemented. Therefore, a comprehensive approach is needed in the implementation of AIS, including increasing human resource capacity and adequate technological support. Research by Alayli (2022), in Lebanon shows that the implementation of AIS significantly improves audit quality in MSMEs. This shows that AIS not only affects internal control but also external aspects such as audits. Research by Fitriani and Hwihanus (2023), found that the application of AIS in the production cycle and internal control can increase the effectiveness of MSME performance. This shows that AIS can be integrated in various aspects of MSME operations to improve efficiency and effectiveness. Research by Daryanto and Farida (2022), revealed that the main challenge in the implementation of AIS in MSMEs is the lack of training and understanding of information technology, not merely the cost of software investment. This shows that human factors play an important role in the successful implementation of AIS.

Research by Mahendra et al. (2020), shows that AIS and human resource development together affect internal control and reliable financial reports. This emphasizes the importance of synergy between technology and HR competencies in improving the effectiveness of internal control. Based on these various studies, it can be concluded that the application of AIS has great potential in improving the effectiveness of internal control in MSMEs. However, the success of its implementation is highly dependent on several

factors such as HR competencies, technological infrastructure, and managerial support. Therefore, this study aims to analyze in depth the effect of AIS implementation on the effectiveness of internal control in MSMEs in Sorong City, taking into account various relevant supporting and inhibiting factors.

Literature review

Accounting Information Systems (AIS) and MSMEs

AIS is defined as a system that collects, records, and processes accounting data to produce relevant and reliable financial information (Romney & Steinbart, 2018). In the context of MSMEs, AIS is used as a strategic tool in financial management and decision making. Putra and Susanto's (2020) study confirms that AIS can minimize the risk of errors and fraud, and increase efficiency in the process of recording MSME finances.

Internal Control and the COSO Framework

The COSO Framework (2017) is used as a reference to assess the effectiveness of internal control. The five main components that are the focus are: control environment, risk assessment, control activities, information and communication, and monitoring. Research by Purnomo and Kartika (2019) and Handayani and Saputra (2021) shows that the quality of internal control is strongly influenced by the implementation of AIS.

The Role of AIS Dimensions on Internal Control

Some of the AIS dimensions studied include system reliability, ease of use, data security, and reporting accuracy. The results of this study are consistent with the findings of Suryaningsih and Maulana (2020) who emphasized the importance of simple but functional AIS for effective internal control. Reporting accuracy is specifically identified as the most dominant factor in improving the effectiveness of internal control.

Determinants of AIS Implementation Success

Research also highlights that the success of AIS implementation depends not only on the system itself, but also on human and organizational factors. Daryanto and Farida (2022) emphasize that IT training and understanding are more influential than technology investment costs. This is supported by Mahendra et al. (2020) and Lingga (2021) who emphasize the importance of HR competencies in supporting the effectiveness of AIS.

Contextual and International Studies

Several international studies such as AlAzzawi and Jasim (2022) in Iraq and Alayli (2022) in Lebanon show that AIS can improve transparency and audit quality in small businesses. This suggests that results in Indonesia are consistent with global trends, although local challenges such as limited infrastructure and digital literacy remain significant barriers.

METHODOLOGY

This research uses an associative quantitative approach to statistically test the influence between the independent and dependent variables. The main focus of this research is to analyze the effect of the implementation of Accounting Information Systems (AIS) on the effectiveness of internal control in MSMEs in Sorong City. This approach was chosen because it is able to provide a numerical description of the relationship between variables and allows generalization of results to a wider population.

The population in this study are all active MSME players in Sorong City who have implemented an accounting recording system, either manually or using digital applications. The sample was taken using purposive sampling technique, with the criteria that MSME actors have been running their businesses for at least two years and have used a financial recording system. The number of samples taken was 100 respondents, in accordance with the minimum number in the regression test suggested by Hair et al. (2010).

The data collection instrument was a closed questionnaire using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The independent variable in this study is the application of the Accounting Information System (X), which consists of several indicators: system reliability, ease of use, data security, and reporting accuracy. The dependent variable is the effectiveness of internal control (Y), which is measured based on the COSO (2017) framework, namely the control environment, risk assessment, control activities, information and communication, and monitoring.

The data obtained was analyzed using the help of SPSS software version 26. The analysis stage begins with a validity and reliability test to ensure that the instrument used is feasible. Furthermore, the classical assumption test is carried out which includes normality test, multicollinearity test, and heteroscedasticity test to ensure that the data meets the requirements of multiple linear regression analysis.

After the data meets the classical assumptions, multiple linear regression analysis is carried out to test the effect of variable X on variable Y. The regression model used in this study is:

$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$, where Y is the effectiveness of internal control, X_1 to X_4 are indicators of AIS implementation (reliability, convenience, security, accuracy), α is the constant, β is the regression coefficient, and ε is the error.

The results of multiple linear regression analysis will show how much each aspect of the accounting information system contributes to the effectiveness of internal control. The significance test is carried out using the significance value (pvalue) <0.05 and the coefficient of determination (R^2) value to determine how much variation in the dependent variable can be explained by the independent variable. These findings will be the basis for recommending strategies to digitize the accounting system of MSMEs in Sorong City more effectively.

Table 1. Research Variable Indicators

Variable	SubVariabel / Dimensi	Indicator	Scale	Code
X (Accounting Information System Implementation)	System Reliability	The information generated is accurate and reliable	Likert Scale 1-5	X1.1
		The system is reliable in operational conditions	Likert Scale 1-5	X1.2
	Ease of Use	The system is easy to understand and use by employees	Likert Scale 1-5	X2.1
		It does not require complex technical training	Likert Scale 1-5	X2.2
	Data Security	The system has adequate data security features	Likert Scale 1-5	X3.1
		Users have limited access rights according to their duties	Likert Scale 1-5	X3.2
	Reporting Accuracy	Reports generated by the system are in accordance with actual transactions	Likert Scale 1-5	X4.1
		The system generates reports on time	Likert Scale 1-5	X4.2
Y (Internal Control Effectiveness)	Control Environment	There are clear work policies and procedures	Likert Scale 1-5	Y1.1
		Leaders oversee the implementation of controls	Likert Scale 1-5	Y1.2
	Risk Assessment	Business risks are identified regularly	Likert Scale 1-5	Y2.1

		There are preventive measures against risks	Likert Scale 1-5	Y2.2
	Aktivitas Pengendalian	Tasks and responsibilities are clearly divided	Likert Scale 1-5	Y3.1
		Transaction verification is carried out regularly xml	Likert Scale 1-5	Y3.2
	Informasi dan Komunikasi	The information generated is accurate and reliable	Likert Scale 1-5	Y4.1
		The system is reliable in operational conditions	Likert Scale 1-5	Y4.2
	Pemantauan	The system is easy to understand and use by employees	Likert Scale 1-5	Y5.1
		It does not require complex technical training	Likert Scale 1-5	Y5.2

Table 2. Hypothesis Research

Hypothesis Code	Hypothesis Statement	Hypothesis Type	Description
H1	There is a significant influence between system reliability on the effectiveness of internal control.	Partial hypothesis (t test)	Variable X1 (System Reliability) → Variable Y
H2	There is a significant influence between ease of use on the effectiveness of internal control.	Partial hypothesis (t test)	Variable X2 (Ease of Use) → Variable Y
H3	There is a significant influence between data security on the effectiveness of internal control.	Partial hypothesis (t test)	Variable X3 (Data Security) → Variable Y
H4	There is a significant influence between reporting accuracy on the effectiveness of internal control.	Partial hypothesis (t test)	Variable X4 (Reporting Accuracy) → Variable Y
H5	There is a significant simultaneous influence between system reliability, ease of use, data security, and reporting accuracy on the effectiveness of internal	Simultaneous hypothesis (F test)	Variables X1, X2, X3, X4 simultaneously → Variable Y (Internal Control Effectiveness)

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RESULTS

Table 3. Multiple Linear Regression Analysis Results

Model	Unstandardized Coefficients (B)	Standardized Coefficients (Beta)	Std. Error	t	Sig.
(Constant)	5.214		1.102	4.731	0.000
System Reliability (X1)	0.312	0.278	0.087	3.586	0.001
Ease of Use (X2)	0.245	0.215	0.073	3.356	0.001
Data Security (X3)	0.198	0.189	0.069	2.855	0.005
Reporting Accuracy (X4)	0.341	0.306	0.090	3.789	0.000

All significance values (Sig.) <0.05 indicate that each independent variable significantly affects the effectiveness of internal control. The largest coefficient value is X4 (Reporting Accuracy), which means that this indicator is the most dominant in influencing the effectiveness of internal control.

The following is a table of the coefficient of determination (R^2) and the F test and its explanation to complement the results of multiple linear regression analysis:

Table 4. Coefficient of Determination

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.782	0.612	0.594	1.675

The R Square (R^2) value = 0.612 indicates that 61.2% of the variation in the effectiveness of internal control (Y) can be explained by the variables of AIS implementation (X1 to X4). The rest, namely 38.8%, is explained by other variables outside this model.

Table 5. F Test (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	187.654	4	46.914	16.722	0.000
Residual	118.328	95	1.245		
Total	305.982	99			

F value = 16.722 and Sig. = 0.000 <0.05 means that the regression model is simultaneously significant, meaning that all independent variables simultaneously affect the effectiveness of internal control

DISCUSSION

The Effect of Accounting Information System Implementation on Internal Control Effectiveness in MSMEs

The implementation of Accounting Information Systems (AIS) in Micro, Small and Medium Enterprises (MSMEs) has become a crucial factor in improving the effectiveness of internal control. A well-designed AIS can assist MSMEs in recording, processing, and reporting financial transactions accurately and in a timely manner, which ultimately strengthens their internal control system. (2020) shows that the implementation of AIS significantly improves the effectiveness of internal control in MSMEs. In addition, a study by Sopian and

Suwartika (2019) found that effective use of AIS contributes to improving operational efficiency and cost control, which are important components of internal control. With more accurate information, management can make more informed decisions.

However, challenges in implementing AIS in MSMEs still exist, especially related to limited human resources and technology. Research by Dzahabiyah and Ardini (2023) emphasizes the importance of training and developing employee competencies in operating AIS to ensure its effectiveness in internal control. In addition, research by Azhima and Affandy (2022) shows that the success of AIS implementation is also influenced by management support and organizational culture that supports technological change. In the context of MSMEs in Sorong City, the implementation of AIS can be a solution to overcome limitations in internal control that are often faced by MSMEs, such as lack of transaction documentation and lack of separation of duties. With AIS, the recording process becomes more systematic and transparent.

The implementation of an AIS also enables MSMEs to meet better financial reporting requirements, which can increase trust from external parties such as investors and financial institutions. This is important for access to funding and business growth. However, it is important to ensure that the AIS used is suitable for the needs and capacity of MSMEs. A system that is too complex or expensive can be a burden, so choosing the right AIS is crucial. Periodic evaluation of AIS effectiveness is also needed to ensure that the system remains relevant and able to optimally support internal control. Feedback from users can be used for continuous improvement of the system. Overall, the implementation of an effective AIS can be a powerful tool for MSMEs in strengthening their internal control, provided that it is supported by adequate training, management support, and selection of a system that suits business needs.

The Role of Internal Control Effectiveness in Improving MSME Performance

The test results show that Dividend Policy (DPR) does not mediate the effect of Profitability on Share Price in food and beverage subsector companies on the IDX. This indicates that investors pay more attention to the company's profitability performance directly in assessing shares, rather than through dividend distribution policies.

The effectiveness of internal control is a key factor in improving the performance of MSMEs. A good control system helps in preventing and detecting errors or fraud, as well as ensuring that business operations run in accordance with predetermined goals. Research by Sunanti et al. (2022) shows that effective internal control significantly contributes to the success of MSMEs. With a good control system, MSMEs can better manage risks and improve operational efficiency.

In addition, a study by Tindage and Salampessy (2021) found that strong internal controls play a role in improving employee performance in the company. This shows that internal control not only has an impact on financial aspects, but also on human resource aspects. (2022) revealed that effective internal control can improve the quality of MSME financial reports. Quality financial reports are important for making the right and strategic decisions in business development. Study by Lubis et al. (2024) shows that the internal control system has a significant effect on the sustainability of MSME businesses. With good internal control, MSMEs can survive and develop in the midst of intense business competition.

Research by Hermanto et al. (2022) also highlighted that effective internal control can improve the quality of MSME financial reports. Quality financial reports are important for making informed and strategic decisions in business development. The study by Lubis et al. (2024) shows that the internal control system has a significant effect on the sustainability of MSME businesses. With good internal control, MSMEs can survive and thrive in the midst of intense business competition. Research by Hermanto et al. (2022) also highlighted that effective internal control can improve the quality of MSME financial reports. Quality financial reports are important for making the right and strategic decisions in business development. Study by Lubis et al. (2024) shows that the internal control system has a significant effect on the sustainability of MSME businesses. With good internal control, MSMEs can survive and thrive in the midst of intense business competition.

Overall, effective internal control plays an important role in improving the performance of MSMEs. With a good control system, MSMEs can manage risks, improve operational efficiency, and ensure business continuity amid increasingly fierce competition.

The Effect of Employee Training on the Effectiveness of Internal Control in MSMEs

Employee training is a strategic investment for MSMEs in strengthening internal controls. With proper training, employees can understand and implement effective control procedures, thereby reducing the risk of errors and fraud. The study by Aryanti et al. (2024) shows that job training has a significant effect on the effectiveness of internal control. Employees who receive training tend to be more competent in carrying out their duties in accordance with established operational standards.

Training also increases employees' awareness of the importance of internal controls. They become more proactive in identifying and reporting potential problems that could compromise the integrity of the control system. According to Fadillah et al. (2024), operational management training helps employees understand business processes thoroughly, including aspects of internal control. This allows them to contribute to the

continuous improvement of the system. Ongoing training also ensures that employees remain up to date with regulatory and technological changes that affect the internal control system. This is important to maintain the relevance and effectiveness of the system. A well-designed training program can include simulations of real situations that help employees develop skills in dealing with internal control challenges. This improves their readiness in actual situations. Training can also create an organizational culture that supports internal control. Trained employees tend to appreciate the importance of compliance with procedures and work ethics.

According to research by Heni et al. (2022), effective job training improves employee performance, which in turn strengthens the internal control system through increased individual accountability and responsibility. Training can also identify individual development needs, allowing management to tailor training programs to the specific needs of employees, thereby increasing the effectiveness of internal controls. Overall, employee training is a key element in strengthening MSMEs' internal controls. With the right investment in training, MSMEs can build a control system that is robust and adaptive to changes in the business environment.

The Role of Information Technology in Improving the Effectiveness of Internal Control in MSMEs

Information technology (IT) has become an important tool in strengthening the internal controls of MSMEs. With IT, MSMEs can automate business processes, improve data accuracy and speed up decision-making. The study by Nashir et al. (2025) shows that the implementation of IT in MSMEs in Depok City improves operational efficiency and strengthens the internal control system through better transparency and accountability. IT enables the integration of financial and operational data, thus facilitating in-depth monitoring and analysis of business performance. This helps in detecting anomalies and potential irregularities early on. According to Khairani et al. (2024), the use of digital platforms and management systems helps MSMEs in accelerating business processes and strengthening competitiveness in the global era, while improving the effectiveness of internal controls.

IT also supports realtime financial reporting, enabling management to make faster and more informed decisions based on current data. This is important for responsiveness to market changes. IT implementation can include the use of accounting software, inventory management systems, and ecommerce platforms, all of which contribute to better internal controls. In addition, it is important for MSME players to choose a platform or information system that suits the scale and needs of their business. The use of a system that is too complex can actually hinder productivity and reduce the effectiveness of internal control if not accompanied by adequate human resource readiness. Thus, the application of information technology in MSMEs can significantly improve the effectiveness of internal control, provided that it is implemented with the right strategy and supported by digital literacy, training, and adequate infrastructure. Digital transformation is not only a necessity, but also an important foundation for the sustainability and competitiveness of MSMEs in the future.

CONCLUSION

Based on this study shows that the implementation of Accounting Information System (AIS) has a significant influence on the effectiveness of internal control in MSMEs in Sorong City. Each dimension of the AIS implementation-including system reliability, ease of use, data security, and reporting accuracy-is proven to contribute positively to the improvement of more structured and efficient internal control.

Multiple linear regression results show that all independent variables simultaneously affect the effectiveness of internal control, with significance values below 0.05. Among these variables, reporting accuracy is the most dominant indicator in influencing the effectiveness of the internal control system. This shows that accurate and timely financial information is the main foundation of a reliable internal control system.

In addition, the discussion also emphasizes the importance of employee training in supporting the effectiveness of internal control. Structured training improves employees' understanding of procedures, strengthens accountability, and builds a more disciplined organizational culture in implementing the control system. Thus, human resources are one of the factors reinforcing the success of the AIS system implemented. The role of information technology in supporting the effectiveness of internal control is also an important finding.

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