

Implementation of Software-Based Accounting Information Systems in MSMEs and its Effect on Smoothness of Internal Audit (Food sector MSMEs in Langkat Regency)

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Abstract.

Micro, Small, and Medium Enterprises (MSMEs) play a vital role in Indonesia's economy, including in Langkat Regency, where the food sector serves as a key economic pillar. A persistent challenge faced by these enterprises is the predominance of manual financial recordkeeping, which increases the risk of errors and complicates internal audits. This study aims to analyze the impact of software-based Accounting Information Systems (AIS) on the effectiveness of internal audits within food-sector MSMEs in Langkat Regency. The research employs an associative quantitative method, with a sample of 97 respondents selected through purposive sampling. Data were collected via questionnaires and analyzed using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with SmartPLS software. The findings reveal that the implementation of software-based AIS has a positive and significant effect on the smooth execution of internal audits, as indicated by a t-statistic of 19.898 (greater than the critical value of 1.985) and a p-value of 0.000 (less than 0.05). Among the 95 valid respondents, 40% reported using accounting software and experiencing benefits such as improved accuracy in recordkeeping, timely financial reporting, and enhanced ease of internal auditing. The implications of this study underscore the importance of advancing digital accounting literacy, fostering local government support, and expanding access to affordable software solutions to strengthen transparency and competitiveness among food-sector MSMEs.

Keywords: Accounting Information System; Accounting Software; Internal Audit and MSMEs.

I. INTRODUCTION

According to the Ministry of Cooperatives and SMEs, the opportunities for the advancement of MSMEs in Indonesia are still very large because they are supported by the development of digital technology, changes in people's consumption patterns, and increased access to financing [1][2]. The food sector is one of the most prospective, given its contribution to increasing people's income and regional economic growth [3][4]. Langkat Regency as one of the regions with a growing number of MSMEs also has great potential in the food sector, both local processed products and culinary businesses that are growing rapidly [5][6]. This opportunity will be optimized if MSMEs are able to improve their business governance through an accurate and transparent financial recording system.



Fig 1. SME development

Based on the Ministry of Investment/BKPM report for the first semester of 2024, there were 2.41 million MSME projects with an investment value of Rp127 trillion and absorbing more than 4.6 million workers [7]. The five dominant sectors of MSMEs are wholesale and retail trade, food and beverages, processing industry, construction, and agriculture [8][9]. This data shows that the food and beverage sector occupies a strategic position after trade, including in Langkat District, which has many culinary and processed food businesses. Micro, Small, and Medium Enterprises (MSMEs) play a significant role in the Indonesian economy. Based on data from the Ministry of Cooperatives and SMEs in 2023, the number of MSMEs in Indonesia reached more than 65 million business units and absorbed around 97% of the national workforce and contributed 61% to the Gross Domestic Product (GDP) [10]. At the regional level, especially in Langkat Regency, food sector MSMEs are one of the main contributors to local economic growth through production, distribution, and employment activities. This great potential shows that MSMEs need to be managed with good managerial and record-keeping systems to be able to compete sustainably. One of the main challenges faced by MSMEs is the weak financial transaction recording system. Based on a survey by Kadin Indonesia in 2024 [8], around 52.5% of MSMEs in Indonesia still use manual records, either in the form of notebooks or simple notes, making them prone to errors, data loss, and difficult to trace during internal checks [11]. This condition is also reflected in food sector MSMEs in Langkat Regency, where most business actors do not have a deep understanding of structured accounting information systems.

According to [12], an accounting information system (AIS) is a system that collects, records, stores, and processes accounting data to produce useful information for decision making. This definition shows that the application of software-based AIS is not just a recording tool [13], but an important means of presenting accurate, fast, and accountable financial reports. With accounting software, MSMEs not only reduce the risk of manual errors but also increase the reliability of data when checks are carried out [14]. Internal auditing is a critical component in maintaining the quality of financial reporting [15]. According to [16], internal auditing is an independent activity designed to assess the effectiveness of internal controls and provide assurance regarding the reliability of financial statements [17]. This implies that the smooth execution of internal audits within MSMEs is highly influenced by the quality of the accounting information systems (AIS) employed. The more structured and digitized the accounting system, the easier it becomes for internal auditors and business owners to conduct evaluations, detect errors, and make informed decisions [18]. The implementation of software-based AIS presents a viable solution for enhancing the quality of financial recordkeeping in MSMEs. Accounting software can generate financial reports automatically, accurately, and in a well-documented manner, thereby accelerating the internal audit process [19]. A study by the Indonesian Institute of Accountants (IAI) in 2021 found that the use of accounting software can improve recording efficiency by up to 40% compared to manual methods. The main problem in food sector MSMEs in Langkat Regency is the lack of application of accounting software due to limited human resources, costs, and technological knowledge.

Many MSME players still consider the use of accounting software not too urgent so that internal checks often encounter obstacles, both in terms of the completeness of transaction evidence and the timeliness of reporting. This condition has an impact on delays in financial evaluation, lack of transparency, and decreased internal and external parties' trust in business credibility. With this background, research on "Implementation of Software-Based Accounting Information Systems in MSMEs and its Effect on the Smoothness of Internal Audit (Food Sector MSMEs in Langkat Regency)" is important to do. This research is expected to make a real contribution in analyzing the extent to which accounting software is able to increase the effectiveness of financial records and the smoothness of internal checks, as well as provide recommendations for MSMEs to strengthen their financial governance.

II. METHODS

This study employs a quantitative method with an associative approach to analyze the influence of software-based Accounting Information System (AIS) implementation on the effectiveness of internal audits among food-sector MSMEs in Langkat Regency [20]. This approach was selected for its ability to explain causal relationships between variables, wherein the implementation of software-based AIS (X) is

hypothesized to affect the smooth execution of internal audits (Y). The research population consists of approximately 3,500 food-sector MSMEs registered with the Department of Cooperatives and MSMEs of Langkat Regency. The sample size was determined using Slovin's formula with a 5% margin of error, resulting in 97 respondents. Sampling was conducted using purposive sampling, based on specific criteria [21], including: (1) MSMEs in the food sector operating for a minimum of two years, (2) conducting financial recordkeeping either manually or using software, and (3) willingness to participate as research respondents. The data utilized in this study comprise both primary and secondary sources. Primary data were collected through the distribution of questionnaires using a 5-point Likert scale, containing statements related to indicators of software-based AIS and internal audit effectiveness.

Questionnaires were distributed directly to MSME operators and digitally via online forms to reach respondents who were difficult to contact. In addition to the questionnaires, brief interviews were conducted with selected respondents to deepen understanding of their financial recording practices. Secondary data were obtained from official documents issued by the Department of Cooperatives and MSMEs of Langkat Regency, reports from the Central Bureau of Statistics (BPS), and academic literature related to AIS and internal auditing. Data analysis was conducted using Structural Equation Modeling–Partial Least Squares (SEM-PLS) with the aid of SmartPLS software [22]. This technique was chosen due to its suitability for studies with relatively small sample sizes, its capacity to handle latent variables with multiple indicators, and its ability to test both direct and indirect relationships between variables. The analytical stages included convergent and discriminant validity tests to assess indicator suitability, reliability tests using Cronbach's Alpha and Composite Reliability, and structural model evaluation through R-Square values. Hypothesis testing was performed by examining the t-statistics and p-values obtained from bootstrapping to determine the significance of the relationships between variables.

III. RESULT AND DISCUSSION

Table 1. Respondent Characteristics

Characteristic	Category	Number (People)	Percentage (%)
Gender	Male	45	46.4%
	Female	52	53.6%
Age	< 25 years	10	10.3%
	25–35 years	38	39.2%
	36–45 years	30	30.9%
	> 45 years	19	19.6%
Type of Business	Snack and chips production	28	28.9%
	Homemade cake and bread business	22	22.7%
	Candied fruit and processed fruit products	18	18.6%
	Ready-to-eat culinary business (food stalls/take away)	20	20.6%
	Processed beverages (coffee, juice, herbal tea)	9	9.2%
Monthly Profit	< Rp5 million	25	25.8%
	Rp5–10 million	40	41.2%
	Rp10–20 million	22	22.7%
	> Rp20 million	10	10.3%

Source: Author's Observation, 2025

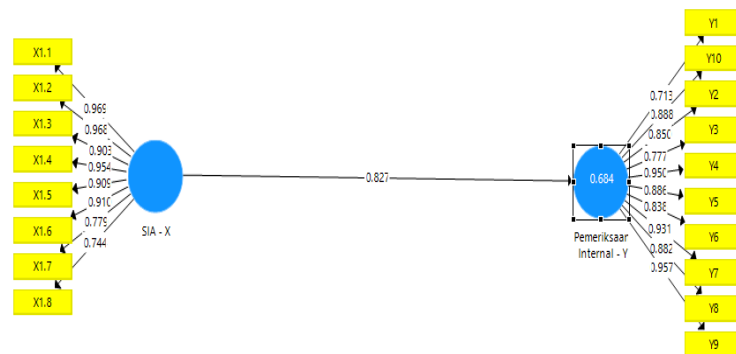
The results showed that the majority of food sector MSMEs in Langkat Regency were female (53.6%), while men accounted for 46.4%. In terms of age, respondents were dominated by the 25 – 35 year group (39.2%), which reflects productive age, followed by the 36 - 45 year group (30.9%). The types of businesses are quite diverse, with the dominance of chips and snacks production (28.9%), home-made cakes and breads (22.7%), and ready-to-eat culinary (20.6%). In addition, there are candied and processed fruit businesses (18.6%) and processed beverages such as coffee, juice, and herbal tea (9.2%). In terms of profit, most business owners earn a monthly income of IDR5-10 million (41.2%), followed by IDR10-20 million (22.7%), indicating that business conditions tend to stabilize at the middle level.

Data Description**Table 2.** Indicators of Software-Based Accounting Information System (AIS)

Variable	Indicator	Source	Measurement Scale
Implementation of Software-Based Accounting Information System (AIS) (X)	Accuracy of recording	Romney & Steinbart (2018)	Likert 1–5
	Timeliness of report presentation	Romney & Steinbart (2018)	Likert 1–5
	Completeness of information	Romney & Steinbart (2018)	Likert 1–5
	Ease of software use	Romney & Steinbart (2018)	Likert 1–5
	Data security	Romney & Steinbart (2018)	Likert 1–5

Table 3. Indicators of Internal Audit Smoothness

Variable	Indicator	Source	Measurement Scale
Internal Audit Smoothness (Y)	Effectiveness of internal control	Sawyer (2019)	Likert 1–5
	Reliability of financial reports	Sawyer (2019)	Likert 1–5
	Compliance with procedures	Sawyer (2019)	Likert 1–5
	Audit efficiency	Sawyer (2019)	Likert 1–5

SEM – PLS Result**Outer Model****Table 4.** Outer Loading Test Results

Variable	Indicator	Outer Loading
Software-Based Accounting Information System (X)	X1.1	0.969
	X1.2	0.968
	X1.3	0.903
	X1.4	0.954
	X1.5	0.909
	X1.6	0.910
	X1.7	0.779
	X1.8	0.744
Internal Audit Smoothness (Y)	Y1	0.713
	Y2	0.850
	Y3	0.777
	Y4	0.950
	Y5	0.886
	Y6	0.838
	Y7	0.931
	Y8	0.882
	Y9	0.957
	Y10	0.888

Based on the results of the outer loading test, all indicators on the Accounting Information System (X) and Internal Audit (Y) variables show values above 0.70, so they can be said to be valid in reflecting their constructs. The SIA (X) indicator has the highest value at X1.1 (0.969) and X1.2 (0.968), which indicates that the accuracy and timeliness of recording are the most dominant aspects, while the lowest value

is at X1.8 (0.744) which is still within the valid limit. In the Internal Audit variable (Y), the highest values are obtained by Y9 (0.957) and Y4 (0.950), indicating that the indicators of the reliability of financial statements and the effectiveness of internal control are the main factors, while the lowest values are in Y1 (0.713) and Y3 (0.777) but still meet the validity requirements. This indicates that all indicators are suitable for use in the research model because they are able to represent latent variables well.

Table 5. Construct Reliability

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Internal Audit Smoothness – Y	0.963	0.966	0.969	0.757
Software-Based AIS – X	0.963	0.964	0.970	0.802

Based on the outer loading test results, all indicators of the Software-Based Accounting Information System (X) and Internal Audit Smoothness (Y) variables have values above 0.70, thereby meeting the criteria for convergent validity. For the AIS variable, indicators X1.1 (0.969) and X1.2 (0.968) recorded the highest values, confirming that the accuracy of recording and timeliness of report presentation are the most dominant aspects, while X1.8 (0.744) showed the lowest loading but remained valid. For the Internal Audit Smoothness variable, indicators Y9 (0.957) and Y4 (0.950) showed the strongest influence, reflecting that the reliability of financial reporting and effectiveness of internal control are the key factors, while Y1 (0.713) had the lowest value yet was still acceptable. These findings indicate that all indicators can be used in the research model as they are able to adequately represent the latent variables.

Table 6. R-Square Test

	R Square	R Square Adjusted
Internal Audit Smoothness – Y	0.684	0.680

Based on the R-Square test results, the value obtained for the Internal Audit Smoothness (Y) variable is 0.684, with an Adjusted R-Square value of 0.680. This indicates that the Software-Based Accounting Information System (X) variable is able to explain 68.4% of the variation in internal audit smoothness, while the remaining 31.6% is influenced by other factors outside the research model. This value falls into the strong category, thus it can be concluded that the implementation of a software-based accounting information system makes a significant contribution to improving the smoothness of internal audits in food sector MSMEs in Langkat Regency

Inner Model (Hypothesis Testing)

Table 7. Hypothesis Test Results

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
SIA - X -> Pemeriksaan Internal - Y	0,827	0,834	0,042	19,898	0,000

The results of hypothesis testing show that the Software-Based Accounting Information System (X) has a positive and significant effect on Internal Audit Smoothness (Y) in food sector MSMEs in Langkat Regency. This is evidenced by the t-statistic value of 19.898, which is greater than the t-table value of 1.985, and the significance value of $0.000 < 0.05$. Thus, the research hypothesis is accepted, which means that the better the implementation of a software-based accounting information system, the smoother the internal audit process carried out in MSMEs.

Discussion

The findings of this study indicate that the implementation of software-based Accounting Information Systems (AIS) has a positive and significant effect on the effectiveness of internal audits among food-sector MSMEs in Langkat Regency. This is evidenced by a t-statistic of 19.898, which exceeds the critical value of 1.985, and a p-value of 0.000, which is below the 0.05 threshold, thus confirming the research hypothesis. These results reinforce the theory proposed by [23][24][25], which defines AIS as a system designed to collect, record, store, and process accounting data to produce information that supports decision-making. The findings are further supported by [26][27], who emphasize that the quality of financial data is a key determinant of internal audit effectiveness. In practice, the adoption of software-based AIS among food-sector MSMEs in Langkat Regency is evident in enterprises such as chip producers, candied

fruit artisans, home-based cake businesses, and small eateries. These businesses are increasingly shifting away from manual bookkeeping toward the use of simple accounting applications such as Accurate, Jurnal.id, and Zahir Accounting to manage their financial transactions. The implementation of software-based Accounting Information Systems (AIS) has provided tangible benefits for MSME operators. Financial transaction recording processes including sales, raw material purchases, inventory calculations, and the preparation of income statements can now be conducted automatically, reducing reliance on error-prone manual records. This automation enhances data accuracy and saves time previously spent on administrative tasks.

Among the 95 food-sector MSME respondents in Langkat Regency, 38 business owners (40%) reported using basic accounting software, while the remainder still relied on manual methods. Those who had transitioned to software indicated greater ease in preparing financial documents for internal audits and external reporting, such as to financial institutions or government agencies. These findings suggest that although AIS adoption is not yet widespread, businesses that have implemented accounting software experience significant advantages particularly in accelerating internal audit processes and minimizing the risk of recording errors. The findings of this study underscore the urgent need for accounting digitalization among MSMEs, particularly in the food sector, which experiences high transaction volumes on a daily basis. Local governments, in collaboration with the Department of Cooperatives and MSMEs, can take strategic measures by providing regular training in digital accounting literacy, facilitating access to low-cost accounting applications, and establishing partnerships with local software providers to ensure that MSMEs receive services tailored to the scale of their operations. Widespread implementation of software-based Accounting Information Systems (AIS) will enhance the transparency and accountability of financial reporting, strengthen trust among financial institutions, and expand opportunities for MSMEs to access capital. Furthermore, the adoption of accounting software contributes to improved business competitiveness, as MSMEs can allocate more focus to production and marketing strategies while financial administration is managed efficiently. Thus, the results of this study offer not only theoretical contributions but also practical recommendations that are essential for the development of food-sector MSMEs in Langkat Regency.

This study aligns with the findings of [28][29][30], which demonstrate that digital accounting applications enhance data accuracy and the effectiveness of internal audits in MSMEs. It also corroborates [31][32][33], who found that software-based accounting systems contribute significantly to financial reporting transparency. Furthermore, the results are reinforced by [34][35][36], who reported that the digitalization of financial recordkeeping among food-sector MSMEs in North Sumatra accelerates internal audits and reduces the risk of data errors. Accordingly, the findings of this research not only support existing theories and prior studies but also provide empirical evidence that the implementation of software-based Accounting Information Systems (AIS) is a strategic imperative for strengthening financial governance among food-sector MSMEs in Langkat Regency. Such implementation fosters greater transparency, accountability, and competitiveness.

IV. CONCLUSION

This study confirms that the implementation of software-based Accounting Information Systems (AIS) has a positive and significant impact on the effectiveness of internal audits among food-sector MSMEs in Langkat Regency. This is evidenced by a t-statistic of 19.898, which exceeds the critical value of 1.985, and a significance level of 0.000, which is below the 0.05 threshold thus validating the research hypothesis. The findings affirm that the more effectively accounting software is implemented, the smoother the internal audit process becomes for MSMEs. The adoption of accounting software has proven to yield tangible benefits for MSME operators, including faster transaction recording, improved financial data accuracy, simplified report preparation, and strengthened internal control mechanisms. Of the 95 respondents, 38 business owners (40%) reported using accounting software, while the remainder continued to rely on manual methods. Those who had transitioned to software noted greater ease in preparing audit documentation and enhanced transparency in financial reporting. The implications of this study highlight the need for local government support in advancing digital accounting literacy, providing targeted training, and expanding

access to affordable accounting software. Such efforts are essential to ensure that all MSMEs can experience similar benefits, thereby promoting more transparent, accountable, and competitive financial management practices across the sector.

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