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The Impact of Accounting Information Systems and Expense Management on MSMEs Profitability: The Mediating Role of Technological Adaptability and Business Process Digitalization

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Abstract
This study aims to analyze the impact of Accounting Information Systems (AIS) and Cost Management on the profitability of Micro, Small, and Medium Enterprises (MSMEs), with Technology Adaptability and Business Process Digitalization serving as mediating variables. The research was conducted on 275 culinary MSMEs in Medan Marelan Regency using the Structural Equation Modeling–Partial Least Squares (SEM–PLS) method. The findings reveal that AIS significantly influences technology adaptability and profitability, but does not directly affect business process digitalization. Cost Management demonstrates a significant positive effect on technology adaptability, business process digitalization, and profitability. Furthermore, both technology adaptability and business process digitalization significantly affect MSME profitability, although technology adaptability shows a negative impact, suggesting that initial technology adoption may burden profitability due to high investment costs. Indirectly, AIS and Cost Management affect profitability through technology adaptability, while only Cost Management influences profitability through business process digitalization. The study contributes theoretically by enriching the body of knowledge on digital transformation in MSMEs and practically by providing insights for MSME practitioners and policymakers to optimize AIS and cost management in fostering sustainable profitability in the digital era.
Keywords: *Accounting Information Systems, Cost Management, Technological Adaptability, Business Process Digitization, Profitability*

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) play a strategic role in a country's economy, particularly in job creation and contribution to Gross Domestic Product (GDP) (Penulis et al., 2022). MSMEs are often regarded as the backbone of the economy due to their flexibility and ability to adapt to market changes (Agustien, 2017). However, in the midst of the digital era and increasingly intense global competition, MSMEs face various challenges in improving profitability and business sustainability. One of the main challenges is suboptimal financial management as well as the lack of technology adoption in their business processes (Fadhila & Mahyudin, 2024). One crucial aspect of financial management is the implementation of Accounting Information Systems (AIS) and Expense Management. AIS is a system that assists companies in collecting, storing, and processing financial data to produce accurate and relevant information for decision-making (Aisyah et al., n.d.). With a reliable accounting information system, MSMEs can improve transaction recording efficiency, reduce the risk of errors, and enhance transparency in financial reporting (Literasi Keuangan et al., 2023). Meanwhile, Expense Management refers to more controlled and efficient cost management, which allows for optimal resource allocation and improved profit margins.

However, the implementation of AIS and Expense Management in MSMEs is not always optimal. Many MSMEs still rely on manual recording methods that are prone to errors and inefficiency (Saragih et al., n.d.). Additionally, the lack of understanding of the importance of effective expense management often results in uncontrolled spending, which lowers business profitability. Therefore, supporting factors are needed to help MSMEs optimize the benefits of AIS and Expense Management *(Diansari et al., n.d.).* One key factor that can strengthen the impact of AIS and Expense Management on MSME profitability is technological adaptability. Technological adaptability reflects the extent to which a business can adopt and integrate new technologies into its operations. In today's digital era, the ability of MSMEs to adapt to technological advancements determines their competitiveness in the market (Oktaviani Irawan et al., 2021). MSMEs that can effectively adapt to technology are more likely to adopt accounting information systems and implement more efficient expense management practices.

In addition to technological adaptability, business process digitalization also plays a vital role in enhancing MSME profitability (Mahyudin et al., 2025). Digitalization includes the automation of various operational aspects, such as financial management, marketing, production, and customer service. With digitalization, MSMEs can reduce dependence on manual processes that are slower and more error-prone (Fadhila & Mahyudin, 2024). For instance, the use of cloud-based accounting software enables MSMEs to access real-time financial reports, thereby accelerating business decision-making. The proper implementation of AIS and Expense Management, when combined with high technological adaptability and effective business process digitalization, can improve MSME operational efficiency and profitability. Therefore, it is crucial for MSMEs to begin adopting technology in various aspects of their businesses. Moreover, government and financial institution support in the form of training and funding is also required to assist MSMEs in facing digitalization and modernizing their financial systems. This study aims to analyze the impact of AIS and Expense Management on MSME profitability, considering the role of technological adaptability and business process digitalization as intervening variables. By understanding the relationship among these variables, this study is expected to provide insights for MSMEs in enhancing financial management effectiveness and leveraging technology for more sustainable business growth. Thus, this research not only has theoretical implications in understanding the relationship between AIS, Expense Management, technological adaptability, business process digitalization, and profitability, but also practical value for MSME practitioners, particularly the 1,845 MSMEs located in Medan Marelan District. Ultimately, the findings are expected to contribute to strengthening MSME competitiveness and sustainability in the digital era.

RESEARCH METHODS

This research employs a quantitative approach using the Structural Equation Modeling (SEM) method. This approach allows testing of the most ideal model in estimating endogenous variables. The population in this study comprises micro, small, and medium enterprises located in Medan City, specifically in Medan Marelan District, which has a total of 1,845 MSMEs. The research population is culinary businesses totaling 875 units under the guidance of the Medan City Cooperative and MSME Office. The sample was determined using the Slovin formula with a margin of error of 5% (0.05) and a confidence level of 95% (0.95). The sample size was calculated as follows:

$$n=\frac{N}{1+(N\ x\ e^2)}$$

Where:
n = Sample

N= Population
d= Margin of Error 5%

The total population desired by the author in this study is 875 people. Using the above formula, it is as follows:

$$n= \frac{875}{1+(875\ X\ 0{,}05^2)}$$

$$n= \frac{875}{3{,}18}$$

n= 274,50 rounded to 275 research samples.

The analytical model used to test the research hypotheses was multiple regression analysis with the Smart PLS application. Multiple regression analysis is a statistical method used to determine the magnitude of the effect between independent variables, namely Expense Management and Accounting Information System, on Cost Efficiency. The regression model is as follows:

Y=a + b1X1 + b2X2 + e
Dimana:
Y= MSME profitability
a= constant
b1-b2= variable coefficients
X1= Accounting Information System
X2= Expense Management
E= error term

Intervening variables are independent variables that provide a theoretical explanation regarding the relationship between independent and dependent variables. There are three approaches to test regression with moderating variables: (1) interaction test, (2) absolute difference test, and (3) residual test. The residual test was applied in this study to test the moderating variables, with the regression equation as follows:

DF= a + b1X1+ b2X2 + e ……..(1)
IeI= a = b2Y……..(2)
Dimana:
DF= Fiscal Decentralization (Moderating Variable)
a= Constant
b1-b2= variable coefficients
X1= Accounting Information System
X2= Expense Management
Y= MSME profitability.

RESEARCH RESULTS AND DISCUSSION

Structural Model Analysis (Inner Model)

The inner model measurement is explained by the results of the path coefficient test, goodness-of-fit test, and hypothesis testing.

R Square

Based on data processing using Smart PLS 3.0, the R-Square values are presented as follows:

Tabel 1. Koefisien Determinasi (R-Square)

	R Square	R Square Adjusted
Technological Adaptability (Z1)	0,924	0,924
Business Process Digitalization (Z2)	0,574	0,571
MSME Profitability (Y)	0,828	0,826

Source: Research Data (2025)

The criteria for R-Square are as follows: The adjusted R-Square for Technological Adaptability is 0.924 or 92.4%, while the remaining 7.6% is influenced by other variables not included in this study. For Business Process Digitalization, the adjusted R-Square is 0.571 or 57.1%, with the remaining 42.9% influenced by external factors. For Profitability, the adjusted R-Square is 0.826 or 82.6%, with the remaining 17.4% explained by variables outside this research model.

Predictive Relevance (Q2)

The Q^2 statistic, commonly referred to as Stone–Geisser's Q^2, serves as an essential indicator of a model's predictive relevance and is conceptually aligned with the coefficient of determination (R^2). Within the context of structural equation modeling and regression-based approaches, Q^2 provides an assessment of the extent to which the model can accurately predict endogenous constructs. A Q^2 value greater than zero ($Q^2 > 0$) signifies that the model possesses predictive relevance, reflecting its capability to reproduce observed data and capture meaningful variance in the dependent variables. Conversely, a Q^2 value less than zero ($Q^2 < 0$) suggests the absence of predictive relevance, implying that the model's explanatory power is insufficient. Importantly, the magnitude of the Q^2 statistic indicates the degree of predictive accuracy, whereby higher values demonstrate superior model fit and robustness. Therefore, Q^2 functions as a critical criterion in evaluating the overall quality and reliability of predictive models in empirical research:

$Q_2 = 1 - (1-R_1^2)\ (1-R_2^2)\ \ldots\ (1-R_n^2)$
$Q_2 = 1 - (1- 0{,}924)\ (1 - 0.571)\ (1-0.826)$
$Q_2 = 1 - (0.076)\ (0.429)\ (0{,}174)$
$Q_2 = 1-0{,}006$
$Q_2 = 0.994$

Based on the results, the Q^2 value is 0.994, indicating that all variables in this study Accounting Information System, Expense Management, Technological Adaptability, Business Process Digitalization, and Profitability contribute 99.4% to the originality of the structural model, with only 0.6% explained by other factors outside the model.

Uji t-statistic (Bootstrapping)

Direct Effects

Hypothesis testing in this study was carried out by analyzing the probability value (p-value) and the level of statistical significance to determine whether the proposed relationships among variables were supported by empirical data. In general, the decision rule applied was that a relationship is considered statistically significant if the p-value is less than 0.05, which indicates that the likelihood of the observed relationship occurring by chance is below 5%. Conversely, if the p-value is equal to or greater than 0.05, the relationship is deemed insignificant, meaning there is insufficient evidence to support the proposed hypothesis. In addition to the p-value, the t-statistic was also used as a complementary criterion for hypothesis testing. At a 5% significance level, the critical value of the t-table is 1.969. Therefore,

a hypothesis is accepted if the t-statistic exceeds this threshold, suggesting that the estimated effect of the variable is statistically meaningful. By applying these two indicators p-value and t-statistic the robustness of the testing process was ensured, thereby minimizing the possibility of statistical errors. The detailed outcomes of the hypothesis testing, including the coefficients, significance values, and statistical measures, are systematically presented in the following table for further interpretation:

Table 2. Direct Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values	Keterangan
AIS (X1) → Technological Adaptability (Z1)	0,706	0,692	0,110	6,443	**0,000**	Significant
AIS (X1) → Business Process Digitalization (Z2)	0,298	0,296	0,177	1,683	**0,093**	**Insignificant**
AIS (X1) → Profitability (Y)	0,455	0,474	0,129	3,533	**0,000**	Significant
Technological Adaptability (Z1) → Profitability (Y)	-0,694	-0,694	0,148	4,688	**0,000**	Significant
Business Process Digitalization (Z2) → Profitability (Y)	0,666	0,671	0,055	12,220	**0,000**	Significant
Expense Management (X2) → Technological Adaptability (Z1)	0,272	0,286	0,116	2,351	**0,019**	Significant
Expense Management (X2) → Business Process Digitalization (Z2)	0,475	0,479	0,176	2,697	**0,007**	Significant
Expense Management (X2) → Profitability (Y)	0,544	0,521	0,099	5,492	**0,000**	Significant

Source: Smart PLS Data (2025)

1. The first hypothesis of this study shows the relationship between Accounting Information System and Technology Adaptability. It was found from the results of processing 275 data samples using the Smart PLS application, where the table above shows that the Accounting Information System has a significant direct effect on Technology Adaptability. This result is demonstrated and can be explained by a significance value of 0.000, which is less than 0.05, and a t-value greater than the t-table (6.443>1.969). Furthermore, the original sample value of 0.706 shows that the direction of the relationship between Accounting Information Systems and technological adaptability is positive, so it can be concluded that the first hypothesis is **accepted**.
2. The second hypothesis of this study shows the relationship between Accounting Information System and Business Process Digitization. It was found from the results of processing 275 data samples using the Smart PLS application, where the table above shows that the Accounting Information System does not have a significant direct effect on Business Process Digitization. This result is demonstrated and can be explained by a significance value of 0.093, which is greater than 0.05, and a t-value that is smaller than the t-table (1.683<1.969). Furthermore, the original sample value of 0.298 shows that the direction of the relationship between the Accounting Information System and Business Process Digitization is positive, so it can be concluded that the second hypothesis is **rejected**.
3. The third hypothesis of this study shows the relationship between Accounting Information System and Profitability. It was found from the results of processing 275 sample data using the Smart PLS application, where the table above shows that the Accounting Information System has a significant direct effect on Profitability. This result is demonstrated and can be explained by a significant value of 0.000, which is smaller than 0.05, and a t-value greater

than the t-table (3.533>1.969). Furthermore, the original sample value of 0.455 shows that the direction of the relationship between the Accounting Information System and Profitability is positive, so it can be concluded that the third hypothesis is **accepted**.

4. The fourth hypothesis of this study shows the relationship between Expense Management and technological adaptability. It was found from the results of processing 275 data samples using the Smart PLS application, where the table above shows that Expense Management has a significant direct effect on technological adaptability. This result is demonstrated and can be explained by a significant value of 0.019, which is smaller than 0.05, and a t-value greater than the t-table (2.351>1.969). Furthermore, the original sample value of 0.272 shows that the direction of the relationship between expense management and technological adaptability is positive, so it can be concluded that the fourth hypothesis is **accepted**.
5. The fifth hypothesis of this study shows the relationship between expense management and business process digitization. The results of processing 275 data samples using the Smart PLS application show that expense management has a significant direct effect on business process digitization, as shown in the table above. This result is demonstrated and can be explained by a significance value of 0.007, which is smaller than 0.05, and a t-value greater than the t-table (2.697>1.969). Furthermore, the original sample value of 0.475 shows that the direction of the relationship between expense management and business process digitization is positive, so it can be concluded that the fifth hypothesis is **accepted**.
6. The sixth hypothesis of this study shows the relationship between expense management and profitability. It was found from the results of processing 275 sample data using the Smart PLS application, where the table above shows that expense management has a significant direct effect on profitability. This result is demonstrated and can be explained by a significance value of 0.000, which is less than 0.05, and a t-value greater than the t-table (5.492>1.969). Furthermore, the original sample value of 0.544 shows that the direction of the relationship between expense management and business process digitization is positive, so it can be concluded that the sixth hypothesis is **accepted.**
7. The seventh hypothesis of this study shows the relationship between technological adaptability and profitability. It was found from the results of processing 275 data samples using the Smart PLS application, where the table above shows that technological adaptability has a significant direct effect on profitability. This result is demonstrated and can be explained by a significance value of 0.000, which is less than 0.05, and a t-value greater than the t-table (4.688>1.969). Furthermore, the original sample value of -0.694 shows that the direction of the relationship between expense management and business process digitalization is negative, so it can be concluded that the seventh hypothesis is **accepted.**
8. The eighth hypothesis of this study shows the relationship between business process digitization and profitability. The results of processing 275 data samples using the Smart PLS application show that business process digitization has a significant direct effect on profitability, as shown in the table above. This result is demonstrated and can be explained by a significance value of 0.000, which is less than 0.05, and a t-value greater than the t-table (12.220>1.969). Furthermore, the original sample value of 0.666 shows that the direction of the relationship between expense management and business process digitization is positive, so it can be concluded that the eighth hypothesis is **accepted.**

Indirect Effects (Mediation Test)

Mediation testing was carried out to examine whether Technological Adaptability and Business Process Digitalization mediated the relationship between AIS and Expense Management on Profitability.

Table 3. Indirect Efffects

Variabel	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	TStatistics (|O/STDEV|)	P Values	Keterangan
Accounting Information System (X1) -> Adaftabilitas Teknologi (Z1) -> Profitabilitas (Y)	-0,489	-0,481	0,127	3,862	**0,000**	Significant
Expense Management (X2) -> Adaftabilitas Teknologi (Z1) -> Profitabilitas (Y)	-0,189	-0,198	0,090	2,098	**0,036**	Significant
Accounting Information System (X1) -> Digitalisasi Proses Bisnis (Z2) -> Profitabilitas (Y)	0,199	0,197	0,115	1,729	**0,084**	**Insignificant**
Expense Management (X2) -> Digitalisasi Proses Bisnis (Z2) -> Profitabilitas (Y)	0,316	0,324	0,126	2,518	**0,012**	Significant

9. The ninth hypothesis of this study shows the relationship between accounting information systems and profitability through technological adaptability. The results of data analysis conducted on 275 data samples processed using the Smart PLS application show that accounting information systems have a significant effect on profitability through technological adaptability. This result is shown and can be explained by the significant value of 0.000 being smaller than 0.05 and the t-count value being greater than the t-table (3.862>1.969). Furthermore, the original sample value of -0.498 shows that the direction of the relationship between the accounting information system and profitability through technological adaptability is negative, so it can be concluded that the ninth hypothesis is **accepted**.
10. The tenth hypothesis of this study shows the relationship between accounting information systems and profitability through business process digitization. The results of data analysis conducted on 275 data samples processed using the Smart PLS application show that accounting information systems have a significant effect on profitability through business process digitization. This result is shown and can be explained by the significant value of 0.084 being smaller than 0.05 and the t-count value being smaller than the t-table (1.729<1.969). Furthermore, the original sample value of 0.199 shows that the direction of the relationship between the accounting information system and profitability through the digitization of business processes is positive, so it can be concluded that the tenth hypothesis is **rejected**.
11. The eleventh hypothesis of this study shows the relationship between expense management and profitability through technological adaptability. The results of data analysis conducted on 275 data samples processed using the Smart PLS application show that expense management has a significant effect on profitability through technological adaptability. This result is shown and can be explained by the significant value of 0.036, which is smaller than 0.05, and the t-count value, which is greater than the t-table (2.090>1.969). Furthermore, the original sample value of -0.189 shows that the direction of the relationship between expense management and profitability through technological adaptability is negative, so it can be concluded that the ninth hypothesis is **accepted.**
12. The twelfth hypothesis of this study shows the relationship between expense management and profitability through business process digitization. The results of data analysis conducted on 275 data samples processed using the Smart Pls application show that expense

management has a significant effect on profitability through business process digitization. This result is shown and can be explained by the significant value of 0.012 being smaller than 0.05 and the t-count value being greater than the t-table (2.518>1.969). Furthermore, the original sample value of 0.316 shows that the direction of the relationship between expense management and profitability through business process digitalization is positive, so it can be concluded that the tenth hypothesis is **accepted**.

Discussion

The Influence of Accounting Information Systems on Technological Adaptability

The research findings indicate that the original sample value of 0.706, with a t-statistic of 6.443 and a p-value of 0.000, demonstrates a positive and significant influence of Accounting Information System (AIS) implementation on Technological Adaptability among micro, small, and medium enterprises (MSMEs) in Medan, specifically in the Medan Marelan district. This result underscores that the higher the quality of AIS implementation within an organization, the greater its ability to adapt to the continuous advancements in technology. Conceptually, an Accounting Information System is a structured mechanism that integrates both financial and non-financial data to produce relevant information for decision-making. When effectively implemented, AIS enables organizations to maintain well-organized databases, generate timely reports, and establish digitalized work procedures. These advantages directly facilitate the adoption of new technological tools without requiring major adjustments to the existing organizational structure.

These findings are consistent with the Technology–Organization–Environment (TOE) Framework, which posits that technological and organizational readiness are interrelated in facilitating the adoption of innovation. A modern and integrated Accounting Information System (AIS) serves as a key indicator of an organization's internal readiness, ultimately accelerating the adaptation process to emerging technologies such as cloud computing, artificial intelligence, and big data analytics. From a practical perspective, AIS integration provides dual advantages in supporting technological adaptability. First, it supplies both historical and real-time data necessary to assess the feasibility of new technologies prior to implementation. Second, the automation embedded in AIS reduces manual workloads, allowing employees to allocate more time and capacity to learning and operating novel technologies. Third, a flexible AIS can be easily connected (interoperable) with other digital tools or systems, thereby enabling faster and more efficient technological integration (Al-Okaily et al., 2020).

The findings of this study are supported by prior research(Kareem et al., 2024) found that modern, digitally based Accounting Information Systems (AIS) not only facilitate financial reporting but also strengthen organizational agility. With a robust information infrastructure, firms become more responsive to technological environmental changes, thereby enhancing adaptability. Consistent with this (Lutfi, 2022) demonstrated that the variables within the TOE framework (technology, organization, and environment) significantly influence AIS adoption in the Sudanese banking sector, with information system quality emerging as a critical factor in innovation adoption. Similar (Saad, 2023) through an evaluation of AIS utilization in the Sudanese banking industry using the DeLone and McLean model, revealed that AIS adoption positively impacts organizational performance, providing strong evidence of technological adaptability. In line with these findings (A, 2025) highlighted that the integration of IoT and AI in accounting enhances operational efficiency, facilitates digital technology adaptation, and supports digital economic transformation. Although not directly focused on AIS, this work reinforces the argument that digital accounting systems play a pivotal role in strengthening the capacity to adopt emerging technologies.

The Influence of Accounting Information Systems on Business Process Digitization

The research findings reveal that the effect of the Accounting Information System (AIS) on Business Process Digitalization produced an original sample value of 0.298, a t-statistic of 1.683, and a p-value of 0.093. Since the p-value exceeds the threshold of 0.05, the relationship between the two variables is statistically insignificant at the 5% significance level. This result indicates that while AIS contributes to the management of financial and operational data, its role is not sufficiently strong to directly drive business process digitalization. This phenomenon can be explained through several theoretical perspectives. Within the Technology-Organization-Environment (TOE) Framework proposed by Tornatzky and Fleischer (1990), technology adoption and implementation are influenced by three dimensions: technological capabilities, organizational support, and environmental pressures. AIS primarily addresses the technological dimension, whereas business process digitalization requires broader organizational support, including digital transformation strategies, visionary leadership, and human resource readiness. Without these supporting factors, the implementation of AIS tends to remain confined to accounting operations rather than evolving into a catalyst for comprehensive digital transformation.

Furthermore, these findings suggest that the Accounting Information Systems (AIS) implemented by the study's respondents are likely still at a stage of partial automation, where the system is primarily utilized for recording, reporting, and financial control, but has not yet been fully integrated with non-financial business processes such as supply chain management, digital marketing, or technology-based customer services. In fact, as emphasized by Davenport (1998), effective digitalization requires cross-functional integration within organizations, rather than the mere digitalization of single functions such as accounting. The findings of this study are consistent with those of Susanto and Meiryani (2019), who assert that the success of business process digitalization requires synergy between information technology infrastructure, organizational culture, and business strategy. They found that Accounting Information Systems (AIS) operating in isolation, without integration into the company's digital strategy, fail to produce a significant impact on digital transformation. In contrast, research by Al-Bar and Hoque (2019) demonstrates that AIS can serve as a catalyst for digitalization when supported by Enterprise Resource Planning (ERP) systems and top management policies. Similar, the results of (Aripin et al., 2024) indicate that while technology enables efficiency and innovation, organizational challenges such as a shortage of skilled human resources, limited managerial awareness of digitalization, and technological misalignment—remain major obstacles. Moreover, environmental support in the form of government policies plays a crucial role in fostering digitalization.

The Effect of Accounting Information Systems on Profitability

The research findings indicate an original sample value of 0.455, a t-statistic of 3.533, and a p-value of 0.000. Statistically, these results demonstrate a positive and significant relationship between the implementation of accounting information systems (AIS) and firm profitability. This suggests that the more effectively AIS is implemented within an organization, the greater its capacity to generate profit. The original sample coefficient of 0.455 further emphasizes that the relationship is moderate in magnitude, yet sufficiently strong to establish that AIS implementation constitutes a critical factor influencing financial performance. The implementation of an effective accounting information system (AIS) provides substantial benefits, primarily through the accurate and timely management of financial data. Accurate financial data enables management to conduct cost analysis, budget planning, and strategic decision-making based on reliable information. This aligns with information system theory,

which emphasizes that the quality of information ultimately determines the quality of managerial decisions. When financial information is presented effectively, organizations can identify potential inefficiencies, reduce waste, and optimize resource utilization, which in turn contributes to improved profitability.

Furthermore, AIS plays a pivotal role in strengthening cost control. Through an integrated system, firms are able to monitor all transactions in real time, minimize the risk of recording errors, and detect cost deviations at an early stage. Enhanced efficiency in cost control directly contributes to higher profit margins. For example, unproductive expenditures can be minimized, excessive operating costs can be reduced, and the overall cost structure of the firm can be better managed. These findings are consistent with prior research, which indicates that AIS implementation enables firms to reduce production and distribution costs, thereby optimizing profitability. From an operational perspective, a well-designed accounting information system (AIS) enhances work efficiency. Automation in transaction recording, financial reporting, and data analysis reduces reliance on manual processes that are time-consuming and prone to error. This efficiency allows firms to reallocate human resources toward more strategic activities, such as product innovation, service quality improvement, or market development. Such operational efficiency, in turn, makes a significant contribution to overall profitability.

Furthermore, the findings of this study indicate that the impact of AIS extends beyond internal operations to external dimensions as well. Reliable financial reports generated by an effective AIS enhance corporate credibility in the eyes of investors, creditors, and other external stakeholders. This credibility facilitates greater access to capital support or investment opportunities, which can subsequently be leveraged to expand business operations and strengthen long-term profitability. The study by (Yogiswara & Sadha Suardikha, 2018) found that the quality of Accounting Information Systems (AIS) has a positive and significant effect on the profitability of LPDs in Denpasar City, aligning with evidence of a moderate yet tangible impact on profitability. Similar (Karthikeyan & Saraswathy, 2024) revealed that the quality, timeliness, and relevance of accounting information are significantly associated with profitability, liquidity, solvency, and shareholder value. Moreover, AIS was shown to play a critical role in supporting risk management, strategic planning, and performance evaluation. Furthermore, a literature review by (Ganyam & Ivungu, 2021) concluded that most empirical studies ranging from the real estate and FMCG sectors to commercial banking and various companies in India and Nigeria consistently demonstrate a positive and significant influence of AIS on profitability and overall financial performance.

The Influence of Expense Management on Technological Adaptability

The results of the study reveal an original sample value of 0.272, a t-statistic of 2.351, and a p-value of 0.019. These findings indicate that cost management exerts a positive and significant influence on the ability of micro, small, and medium enterprises (MSMEs) in Medan, specifically in the Medan Marelan district, to invest in new technologies. In other words, the more effectively a firm manages both operational and non-operational costs, the greater its capacity to allocate financial resources toward technological advancements that align with its business needs. From a financial management theory perspective, cost efficiency is a crucial factor in sustaining a company's cash flow. Effective cost management enables firms to minimize waste, improve profit margins, and maintain liquidity stability. Once efficiency is achieved, companies are able to allocate reserve funds for strategic investments, including the adoption of new technologies. This aligns with the view that technological investments often require substantial capital, making them feasible only for firms with strong and sustainable

financial management practices (Fadila et al., 2024). Furthermore, the findings of this study reinforce the resource-based view (RBV) theory, which emphasizes that a firm's internal resources—including its cost management capability—are critical determinants of competitive advantage. By achieving cost efficiency, firms not only enhance short-term financial performance but also build long-term capabilities through technology. Investments in new technologies may include production process automation, digital-based accounting information systems, or more integrated supply chain management platforms. Ultimately, these forms of investment strengthen operational efficiency while simultaneously enhancing productivity.

From an empirical perspective, these findings are consistent with prior research indicating that effective cost management is positively correlated with a firm's innovation capability. When costs are under control, firms are more willing to take risks in pursuing innovation. For instance, manufacturing firms that succeed in reducing production costs through lean management may allocate part of their profits to acquire advanced machinery. Similar, service companies that lower operational expenses through efficiency strategies can reinvest those savings into developing digital applications to improve service quality. Furthermore, this positive and significant influence underscores the importance of maintaining a balance between efficiency and innovation. Companies that focus solely on cost efficiency without allocating resources for innovation risk stagnation. Conversely, firms that invest too aggressively without a solid foundation in cost management face substantial financial risks. Thus, the findings of this study highlight that cost management is not merely about reducing expenditures, but rather a strategic approach to optimizing resource utilization in order to create added value. The practical implication of this research is that corporate management should develop a cost control system that is measurable, transparent, and adaptive to changes in the business environment. In doing so, available funds can be directed toward technologies that support the company's digital transformation. Moreover, the results emphasize the necessity of corporate policies that foster synergy between cost efficiency and innovation. Such a strategy will not only enable companies to survive but also to achieve sustainable growth in the long term. Supporting evidence for this study is provided by (Ansari & Gupta, 2025) Their empirical research in the Indian healthcare sector revealed that the accumulated stock of ICT rather than merely periodic investments significantly reduces operational costs, thereby fostering more sustainable productivity. Further research by (Hui et al., 2024) demonstrated that digital technologies can mitigate cost stickiness, namely the tendency of costs to remain high despite declining output volumes, when firms effectively utilize Industrial Internet platforms.

The Impact of Expense Management on Business Process Digitization

The research findings indicate that the original sample value is 0.475, with a t-statistic of 2.697 and a p-value of 0.007. This result suggests that efficient cost management exerts a positive and significant influence on the improvement of firms' operational performance through support for digitalization programs in micro, small, and medium enterprises (MSMEs) located in Medan Marelan District, Medan City. In other words, the better a company manages its costs, the greater its ability to allocate resources toward digital technology investments that can enhance both operational effectiveness and efficiency. Conceptually, effective cost management implies that firms are capable of identifying, controlling, and optimizing each cost component to ensure its alignment with strategic priorities. Cost efficiency does not merely focus on cost savings; it also encompasses the strategic allocation of budgets to high-impact areas. A concrete example of such allocation is investment in digital technologies, such as

management information systems, cloud-based accounting applications, and business process automation software. These technologies accelerate information flows, improve data accuracy, and facilitate faster managerial decision-making. These findings are consistent with previous literature emphasizing that digital transformation within firms requires a solid foundation of financial management. Companies with weak cost control often struggle to allocate funds for innovation, as their budgets are consumed by routine, non-productive expenditures. Conversely, when costs are managed efficiently, firms gain the financial flexibility to invest in digitalization initiatives that enhance long-term operational performance. From an operational perspective, digitalization enables the automation of various business activities previously performed manually. For instance, the implementation of Enterprise Resource Planning (ERP) systems can integrate multiple functions such as production, finance, and marketing, thereby reducing data redundancy and accelerating cross-departmental coordination. Similar, the use of digital technologies in inventory management allows firms to minimize the risks of overstocking or shortages of raw materials, ultimately improving production cost efficiency. This demonstrates that the relationship between cost efficiency and digitalization is not merely theoretical, but also practical in supporting day-to-day operational performance.

Furthermore, the results highlight the critical role of managerial mindset in linking cost management with technological innovation. Firms that focus solely on cost-cutting without reinvesting in digitalization may achieve short-term savings but risk losing long-term competitiveness. Thus, cost efficiency should be understood not only as reducing expenditures, but also as a strategic approach to creating financial space for organizational capacity development through digital technologies. Practically, the implication of this study is that financial managers and corporate leaders should formulate budgetary policies that balance operational cost efficiency with the need for investment in digitalization. For instance, companies can conduct regular evaluations of unproductive expenditures and reallocate those funds to finance more efficient digital systems. Through this approach, cost management is not merely a control mechanism, but also a driving force for achieving superior performance. The findings of this study are supported by (Yu et al., 2022) who identified digital transformation capability specifically sensing, organizing, and restructuring as a mediator between strategic orientation and operational performance. Digital capability was found to exert a significant positive influence on performance. Furthermore (Huang & Rust, 2018) revealed in their study on digital-transformation driven organizations that artificial intelligence (AI) has a significant positive effect on cost efficiency and organizational performance, with cost management control systems acting as a mediator. This highlights that effective cost management plays a critical role in supporting technology investments and enhancing performance.

The Effect of Expense Management on Profitability

The findings of this study indicate an original sample value of 0.544, with a t-statistic of 5.492 and a p-value of 0.000. These results suggest a positive and significant relationship between cost control and profit enhancement among micro, small, and medium enterprises (MSMEs) in Medan Marelan District, Medan City. In other words, the more effectively cost control is implemented by a company, the greater its potential to increase profitability. This finding is consistent with financial management theory, which posits that effective cost control minimizes resource waste, improves operational efficiency, and ultimately enhances profit margins. Conceptually, cost control is a core function of management accounting. By implementing rigorous cost control, companies can identify non-value-added activities and reduce unproductive expenditures. This process aligns with the cost reduction strategy approach, in which the primary organizational focus is to maintain the quality of products or

services while reducing the operational costs incurred. Thus, cost control is not merely about cost savings but also about enhancing overall process efficiency. Empirically, these findings reinforce previous studies that emphasize the significant role of effective cost management in determining corporate profitability, regardless of firm size small, medium, or large. In the context of SMEs, which often face capital and resource constraints, cost control becomes a decisive factor for business sustainability. When SMEs are able to efficiently manage raw material, labor, distribution, and overhead costs, they can achieve more stable profit margins and remain competitive with similar enterprises.

Furthermore, cost control is closely linked to budget planning. A realistically prepared budget serves as a guideline for management in allocating resources effectively. When discrepancies arise between actual expenditures and the established budget, management can promptly conduct evaluations and implement corrective measures. This underscores the strategic function of cost control, not only in reducing expenses but also as a managerial tool to ensure that every unit of expenditure contributes meaningfully to the achievement of organizational objectives. The findings of this study also provide practical implications. Companies are advised to implement an accurate and transparent cost accounting system that enables real-time monitoring of cost movements. For instance, by utilizing digital accounting technologies capable of tracking production costs, distribution expenses, and overhead costs in greater detail. This allows management to identify potential inefficiencies at an early stage and take immediate corrective actions. In today's increasingly competitive environment, the ability to exercise precise cost control will serve as a competitive advantage that is difficult for rivals to replicate. Furthermore, these results may serve as a foundation for strategic decision-making. Given the positive correlation between cost control and profitability, management can prioritize long-term policies such as strengthening internal control systems, providing employee training in operational efficiency, and adopting lean management practices. Such strategies not only enhance profitability but also reinforce long-term business sustainability. The findings of this study are supported by (Raj & Lecturer, 2024) who demonstrated a significant positive relationship between cost control and financial performance, highlighting the effectiveness of cost management in enhancing financial stability and competitive advantage. Furthermore (Ventura Hernández et al., 2024) emphasized that production cost control is crucial for maintaining profit margins and competitiveness, particularly for SMEs with limited resources.

The Effect of Technology Adaptability on Profitability

The findings of this study reveal an intriguing and even counterintuitive result, namely the existence of a significant negative relationship between technological adaptability and profitability among micro, small, and medium enterprises (MSMEs) in Medan Marelan District, Medan City. The path coefficient value of -0.694, with a t-statistic of 4.688 and a p-value of 0.000, indicates that the higher the level of technological adaptability adopted by an organization, the lower the profitability it achieves. This phenomenon can be understood from both theoretical and practical perspectives, offering a comprehensive illustration of the complexity of technology's impact on firms' financial performance. First, one of the main explanations for this negative relationship lies in the high costs associated with the adoption and implementation of technology. Investments in new technologies often require substantial financial allocations, including expenditures for hardware, software, and employee training. When such costs are not offset by immediate productivity gains, they may lead to a decline in profitability. This aligns with the resource-based theory, which emphasizes the importance of aligning resource investments with value creation. In other words, while technology can serve as a strategic

resource, without effective management the anticipated competitive advantage may not materialize in the short term. Second, the implementation of technology often brings operational challenges that may lead to temporary inefficiencies. The transition toward digital or newly adopted technology-based systems typically requires a relatively long adaptation process. Employees must adjust, modify their work habits, and acquire an understanding of the new system's mechanisms. If this adaptation process is not yet optimal, instead of enhancing efficiency, it may in fact slow down workflows and reduce productivity. Consequently, this effect can manifest in a decline in corporate profitability, particularly during the initial stages of adoption.

Third, this phenomenon can also be explained through the lens of the technology paradox, which highlights the condition wherein the use of technology does not necessarily translate into immediate improvements in organizational performance. Prior studies have shown that the benefits of new technologies are often realized only in the long term, whereas in the early stages organizations primarily bear the burden of costs and risks. This situation may also arise due to a lack of organizational readiness, whether in terms of supporting infrastructure or human resource capabilities, thereby preventing technology from being fully utilized. Fourth, these findings also open up the possibility of interpreting that technological adaptability does not always align with the business strategies being implemented. In some cases, firms place excessive emphasis on pursuing digitalization trends without adequately considering their compatibility with the existing business model. As a result, the adopted technologies fail to generate substantial added value for the core business and instead become an additional burden that diminishes profitability. Thus, these findings provide important practical implications for management. Technological adaptability is indeed a key element in navigating modern competition; however, organizations must exercise caution in managing this transition. Management should conduct a thorough cost–benefit analysis prior to making technological investments, ensure the readiness of human resources, and align digital strategies with long-term business objectives. Furthermore, firms need to anticipate a potential decline in profitability during the initial implementation phase and regard it as part of the learning curve before the long-term benefits can be fully realized.

(X. Guo et al., 2023a) A study published in the *Journal of Business Research* examined Chinese firms that experienced an increase in total factor productivity (TFP) yet simultaneously reported a decline in overall performance. This paradox occurred due to rising operational costs, declining asset turnover, and growing managerial burdens. Notably, both low and high levels of digital transformation significantly worsened performance, whereas a "moderate" level of digital transformation enhanced it. Supporting evidence from (Gao et al., 2025) further explains the phenomenon of the "digitalization paradox" in the manufacturing industry. A concrete example is a Chinese manufacturing firm that suffered a decline in net profit after making substantial digitalization investments; although its profits briefly recovered, they subsequently declined again in later years. This pattern illustrates that large-scale investments in digital technology convergence do not automatically translate into improved financial returns. Similar (Jain, 2003) identifies a "performance paradox" in the context of 50 U.S. state governments, where higher IT investment was paradoxically associated with weaker administrative performance. However, over time, this negative relationship was found to gradually improve.

The Impact of Business Process Digitization on Profitability

The findings reveal that the original sample value of 0.666, with a t-statistic of 12.220 and a p-value of 0.000, provides strong evidence of a highly significant positive relationship

between the degree of business process digitalization and firm profitability among micro, small, and medium enterprises (MSMEs) in Medan Marelan District, Medan City. This result indicates that the higher the level of digital adoption in business operations, the greater the potential for improving financial performance, as reflected in profitability. The coefficient value of 0.666 demonstrates a relatively strong association, suggesting that digitalization serves as a strategic factor in fostering sustainable business growth. Conceptually, digitalization enables firms to transform various manual business activities into technology-driven processes that are faster, more efficient, and less prone to error. Digital processes such as cloud-based accounting systems, customer relationship management (CRM) applications, supply chain automation, as well as the utilization of big data and artificial intelligence, enhance the speed of information flows while minimizing redundancy in operations. This transformation not only drives cost efficiency but also improves the quality of managerial decision-making, as decisions are supported by more accurate and real-time data.

Moreover, digitalization has been shown to significantly enhance customer experience. By delivering services that are faster, more accurate, and more responsive, firms achieve higher levels of customer satisfaction and loyalty. In turn, strong customer loyalty becomes a stable source of revenue and strengthens a firm's competitive position in the market. For example, within the MSME sector, the implementation of digital platforms for online sales and electronic payments not only broadens market reach but also reduces transaction costs. This efficiency directly contributes to an increase in profit margins. These findings are consistent with prior literature, such as Bharadwaj et al. (2013) who emphasize that digital business strategy is a key driver of modern competitive advantage. Similar Brynjolfsson dan McAfee (2014) demonstrate that firms adopting digitalization more rapidly tend to achieve higher productivity and profitability growth compared to laggards. Accordingly, the present study reinforces empirical evidence that digitalization is no longer merely an option but a strategic imperative for business sustainability. On the other hand, the significant effect of digitalization on profitability also reflects the strong interconnection between digital transformation and the readiness of human resources within organizations. Digitalization cannot be implemented effectively without being accompanied by improvements in employees' digital literacy as well as an organizational culture that is adaptive to technological change. This underscores that digitalization is not solely about investing in technology but also about managing organizational change in a holistic manner. Furthermore, these results remain highly relevant in the context of globalization and the Industry 4.0 era, where firms are required to be more agile and responsive to market dynamics. Digitalization enables organizations to accelerate product and service innovation, thereby meeting increasingly complex consumer demands. In this sense, digitalization serves as a catalyst for the creation of new value, ultimately driving enhanced profitability.

Practically, the findings of this study imply that business actors particularly MSMEs and companies still in transition need to strengthen their digitalization strategies as an integral part of long-term business management. Such efforts may include the development of management information systems, the adoption of e-commerce, the optimization of social media for marketing, and the digitalization of financial reporting. The faster digitalization is implemented, the greater the opportunities for companies to enhance efficiency, expand market reach, and ultimately strengthen profitability. Supporting evidence for this research was provided by (Melnikov & Kalabina, 2023) Their empirical study, based on panel data of Chinese manufacturing firms from 2010 to 2020, demonstrated a positive correlation between the intensity of digital transformation and operational performance. However, the relationship with financial profitability followed a U-shaped curve, indicating that the impact on profitability depends on the extent of transformation implemented. Another study (X. Guo et al., 2023b)

which examined publicly listed firms in China between 2013 and 2020, found that digital transformation enhances total factor productivity (TFP). Nevertheless, in certain cases, it was associated with declines in financial performance due to rising operational costs and elevated management expenditures. The positive effects were observed primarily at a moderate (median) level of digitalization. Furthermore (Abou-foul et al., 2021) analyzing 185 manufacturing firms in the United States and Europe, revealed that digitalization, combined with servitization (the integration of digital services), has a direct positive impact on firms' financial performance. Similar (L. Guo & Xu, 2021) emphasized that digitalization is positively associated with operational performance, though its influence on financial profitability also exhibits a U-shaped pattern.

The Effect of Accounting Information Systems on Profitability Through Technological Adaptability

The findings indicate that the influence of the Accounting Information System (X1) on Profitability (Y) through Technological Adaptability (Z1) exhibits a negative coefficient of -0.489, with a t-statistic of 3.862 and a p-value of 0.000. This result suggests that the effect is statistically significant but negative for micro, small, and medium enterprises (MSMEs) in Medan City, particularly in the Medan Marelan District. This outcome is quite intriguing, as accounting information systems (AIS) are generally expected to enhance organizational performance; however, in this context, technological adaptability appears to suppress profitability. This phenomenon can be explained through the lens of cost–benefit analysis. The process of adapting to new technologies within enterprises especially those operating on a small and medium scale requires substantial investment, including the acquisition of hardware and software, employee training, and adjustments to operational procedures. When the costs of adaptation outweigh the short-term benefits, profitability tends to decline. In other words, technology adoption without adequate business strategy and managerial preparedness can transform into a burden rather than a source of competitive advantage. Previous studies support these findings. For instance, Bharadwaj (2000) demonstrated that firms investing in information technology without an accompanying managerial strategy often fail to achieve significant improvements in financial performance. Similar, Dehning and Richardson (2002) revealed that the relationship between IT investment and profitability exhibits a lagging effect, meaning that the positive impact only materializes in the long run once adaptation processes have been successfully integrated into business strategies.

Furthermore, Chenhall's (2003) research on accounting information systems highlighted that the implementation of technology-based AIS is effective only when aligned with organizational structure and corporate culture. Without adequate organizational readiness, technology adoption tends to increase coordination costs and work complexity, which ultimately suppresses profitability. This is consistent with more recent findings by Sutanto (2021) on SMEs in Indonesia, which showed that accounting digitalization positively influences efficiency but negatively affects profitability when implementation costs and employee training are not properly managed. Thus, the findings of this study confirm that although accounting information systems can foster technological adaptability, their impact on profitability may be negative if firms lack sufficient managerial readiness, strategic planning, and cost-control policies. This implies that the success of technological adaptation is not solely determined by technical factors but also by organizational preparedness, the development of human resource competencies, and the support of sound management policies. The practical implication of these findings is that firms should undertake thorough planning before investing in technology, including cost–benefit analyses, assessments of human resource readiness, and strategies for

aligning technological integration with business objectives. Through such an approach, technological adaptability enabled by accounting information systems will not merely become a financial burden but can be transformed into a driving force for long-term profitability. Supporting research conducted by (Sulistiyowati & Asâ€TMadi, 2023) revealed that the adoption of accounting technology in SMEs enhances financial management efficiency. However, they emphasized that adequate literacy and human resource capabilities are essential for the technology to be truly effective, as it does not automatically lead to increased profitability. Furthermore (Irhamuddin et al., 2025) found that digital accounting strategies significantly influence efficiency, decision-making, and access to financing for SMEs, yet the success of implementation largely depends on financial literacy, training, and the competence of business owners. Without these factors, the benefits may remain limited. In addition (Setiawan et al., 2024) highlighted the challenges faced by SMEs in the digitalization of accounting, such as technological readiness, investment requirements, and organizational constraints, which may hinder short-term positive outcomes.

Accounting Information System on Profitability Through Business Process Digitization

The research findings indicate that business process digitalization does not play a significant mediating role between accounting information systems (AIS) and profitability in micro, small, and medium enterprises (MSMEs) in Medan Marelan District, Medan City. The coefficient value was 0.199, with a t-statistic of 1.729 and a p-value of 0.084, which exceeds the 0.05 significance threshold. Consequently, the mediation hypothesis is not supported. This suggests that the implementation of AIS within organizations does not automatically foster business process digitalization that subsequently leads to enhanced profitability. The results highlight that the relationship among AIS, digitalization, and profitability is more complex and shaped by both internal and external organizational factors. One underlying explanation is that digitalization is not solely dependent on the presence of an AIS, but also on managerial strategies, human resource readiness, and the availability of technological infrastructure. While AIS is capable of producing accurate and relevant information, without management policies that actively support digital transformation, technology-based business processes cannot operate optimally. This finding is consistent with Susanto and Meiryani (2019), who emphasized that the success of digitalization is determined by an organization's readiness to manage change rather than merely by the information systems it employs. In addition, human resource competence is also a crucial factor. Yadav and Agrawal (2020) found that digital adoption in SMEs is often hindered by the limited digital literacy of employees, even when firms already possess information systems. Without adequate expertise, the use of digitalization remains merely procedural, failing to generate operational efficiency or competitive advantage that enhances profitability.

Infrastructure factors likewise cannot be overlooked. A study by Prasetyo and Kistanti (2020) revealed that the readiness of technological infrastructure plays a pivotal role in determining the effectiveness of digitalization in Indonesian SMEs. Firms with limited access to advanced technologies, stable internet networks, or adequate cybersecurity systems are more likely to fail in optimizing the benefits of digitalization, even when accounting information systems have been implemented. Accordingly, the findings of this study suggest an important implication: digitalization does not automatically serve as a significant mediating variable between accounting information systems and profitability. Digitalization can only yield positive outcomes when supported by complementary factors such as a clear digital transformation strategy, enhanced digital literacy among human resources, and investments in technological infrastructure. Therefore, organizations should view digitalization as an integral component of

a broader business strategy rather than merely a logical consequence of accounting information system implementation.

Expense Management on Profitability Through Technology Adaptability

The results of this study indicate that the path coefficient of -0.189, with a t-statistic of 2.098 and a p-value of 0.036, reflects a significant negative effect of technology adaptability mediation on profitability in micro, small, and medium enterprises (MSMEs) in Medan Marelan District, Medan City. This finding is particularly intriguing, as conceptually, effective cost management should enhance efficiency and create opportunities for firms to allocate resources toward technology implementation. However, the results of this study confirm a paradox: technology adaptability, which is expected to be a strength, appears to negatively impact profitability in the short term. The primary explanation for this phenomenon is that initial investments in technology adoption often entail substantial costs, including expenditures for hardware and software acquisition, human resource training, and business process restructuring. Significant cost allocation at this early stage directly affects the company's profit margins, resulting in decreased profitability. This observation aligns with Brynjolfsson & Hitt (2000), who emphasize that the benefits of information technology on financial performance do not occur instantaneously but require time to develop organizational capabilities and adjust operational processes. Furthermore, Teece's (2018) research on dynamic capabilities emphasizes that technological adaptability is a long-term capability that only yields positive impacts once a firm successfully balances the costs of transformation with the creation of new value. In other words, although technological adaptability is a crucial factor for navigating a dynamic business environment, it may initially pose a financial burden before generating sustainable benefits.

Similar, Bharadwaj et al. (2013) found that companies undergoing digital transformation experience a transitional period during which profitability tends to decline due to high capital expenditures and system integration costs. However, in the medium to long term, firms that strategically manage the process of technological adaptation are likely to achieve greater gains compared to those that are slower to adapt. The findings of this study also offer significant managerial implications, suggesting that technology adaptability strategies must be aligned with effective cost management. Firms need to emphasize transitional cost control to minimize potential adverse effects on profitability. Furthermore, it is crucial for management to assess the effectiveness of technology investments not solely from a short-term financial perspective, but also considering business sustainability, operational efficiency, and value creation for customers. Accordingly, this study underscores that technology adaptability constitutes a strategic investment requiring a longer-term horizon to demonstrate its contribution to profitability. Companies that successfully balance cost management with technology adaptation strategies are likely to achieve sustainable competitive advantages in the future.

Expense Management on Profitability Through Business Process Digitization

The research findings indicate that the path coefficient of 0.316, with a t-statistic of 2.518 and a p-value of 0.012, signifies a positive and significant effect of cost management on profitability through business process digitalization in micro, small, and medium enterprises (MSMEs) in Medan Marelan District, Medan City. This underscores that effective cost management practices not only reduce waste but also create opportunities for firms to invest in digital technologies, which in turn enhance operational efficiency and company profits. In other words, the more effectively a firm controls its costs, the greater its potential to implement digital transformation that drives profitability improvement. These findings are consistent with

Susanti et al. (2022), who argue that measurable cost management encourages organizations to adopt digital systems to improve their value chain. Digitalization has been shown to lower operational costs through process automation and reduce reliance on manual resources. Similar, Li and Zheng (2021) emphasize that digital transformation enhances cost management effectiveness and provides greater flexibility in strategic decision-making, enabling firms to be more adaptive to market changes.

Furthermore, digitalization, supported by cost efficiency, can also enhance customer satisfaction. Faster, more transparent, and accurate business processes strengthen consumer trust, ultimately driving revenue growth. This is corroborated by Vial (2019), who emphasizes that digital transformation plays a crucial role in creating added value through improved service quality, product innovation, and operational efficiency, all of which culminate in increased profitability. Conversely, suboptimal cost management can impede digital investment, making it challenging for firms to compete in increasingly technology-driven markets. Therefore, cost management functions not only as a control mechanism but also as a catalyst for creating new investment opportunities in digital technologies. This view is supported by Kraus et al. (2021), who demonstrate that SMEs capable of strategically allocating costs toward digitalization exhibit superior financial performance compared to those that do not invest in technology. Overall, the findings of this study underscore the critical importance of synergy between cost management and digitalization. Efficient cost management provides a solid financial foundation to support investments in digital technologies, while digitalization itself serves as a means to enhance competitiveness, improve efficiency, and ultimately drive profitability. Therefore, companies should view cost management not merely as a control mechanism, but as a strategic tool to accelerate digital transformation aimed at long-term financial performance improvement.

CONCLUSION

In this study, the variables of accounting information system and expense management directly affect technological adaptability in micro, small, and medium enterprises in Medan Marelan District, Medan City. Accounting information system does not directly affect business process digitization in micro, small, and medium enterprises in Medan Marelan District, Medan City. Directly, the accounting information system, expense management, technological adaptability, and business process digitization affect the profitability of MSMEs in micro, small, and medium enterprises in Medan Marelan District, Medan City. Directly, expense management affects business process digitization in micro, small, and medium enterprises in Medan Marelan District, Medan City. Indirectly, Accounting Information System and Expense Management affect the Profitability of MSMEs in micro, small, and medium enterprises in Medan City, Medan Marelan District, through Technology Adaptability. Indirectly, Accounting Information System does not affect the profitability of MSMEs in micro, small and medium enterprises in Medan Marelan District, Medan City through Business Process Digitization. Indirectly, Expense Management affects the profitability of MSMEs in micro, small and medium enterprises in Medan Marelan District, Medan City through Business Process Digitization.

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