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Marketplaces, Accounting Information Systems, and Digital Literacy in Relation to Culinary MSME Perfomance in Medan Timur District

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ABSTRACT

This study analyzes the relationships of marketplace perceptions, accounting information system (AIS) information characteristics, and digital literacy with culinary MSME performance in Medan Timur District. A cross-sectional questionnaire survey was conducted during August until September 2026. The reported sample comprised 80 culinary MSMEs selected purposively from a stated population of 159 businesses. Multiple linear regression showed positive associations for marketplace (B = 0.200, p = 0.028), AIS (B = 0.545, p < 0.001), and digital literacy (B = 0.178, p = 0.032). The overall model was statistically significant, F(3, 76) = 31.717, p < 0.001. The model R square value of 0.556 explains that variables explain 55,6% while the adjusted R square value of 0.538 indicates adjusted power of 53,8%. These results describe associations in the surveyed businesses and do not establish that the predictors caused performance improvement. The findings provide context for understanding digital business practices among culinary MSMEs in the district.

Keywords: Marketplace, Accounting Information System, Digital Literacy, MSME Performance, Digitalization

INTRODUCTION

MSMEs contribute to local economic activity and operate across sectors, including food and beverage businesses. Culinary MSMEs handle frequent sales, purchasing, and customer transactions, so owners need information to manage operations and assess business results. Prior research treats MSME performance as a multidimensional outcome that may include financial and non-financial results (Novela Q.A et al., 2024; Simbala et al., 2022). The present study measures perceived MSME performance; it does not measure sustained sales growth over time. Technological developments encourage MSMEs to utilize digital technology to expand their markets, increase efficiency, and make business decisions. According to (Sitepu et al., 2023), marketplace is a platform that connects various sellers with a variety of products to offer their products to customers. (Ballerini et al., 2023) also demonstrated that the use of marketplace platforms can support MSME performance. Marketplaces provide opportunities for MSMEs to expand their markets and not solely rely on local consumers. Therefore, marketplace utilization is relevant aspect to examine in relation to MSME performance. AIS matter because culinary transactions, including those mediated by digital channels, generate information for cost control and business decisions. (Siahaan et al., 2023), studying MSMEs around Medan Timur, reported a relationship between business-owner behavior and use of AIS, identifying the issue as locally relevant. (Lopung & Rulindo,

2023) analyzed AIS and SME performance. Together these studies motivate attention to AIS. Digital literacy concerns searching for, navigating, evaluating, and combining online information (Arninda et al., 2025). (Novela Q.A et al., 2024) relate digital literacy and business performance through entrepreneurial capabilities. Because the present study measures digitally marketplace practices, AIS, and digital skills in the same survey, their independent associations are of interest. Prior studies have examined marketplace adoption, AIS , and digital literacy through differing constructs, samples, and methods (Ballerini et al., 2023; Lopung & Rulindo, 2023; Novela Q.A et al., 2024; Siahaan et al., 2023). This study examines the perceived culinary-MSME performance within Medan Timur District, between Marketplace use, AIS, and digital literacy. This research is expected to provide empirical evidence regarding the relationship between these three factors and the performance of culinary MSMEs

LITERATURE REVIEW

MSME Performance

According to (Sulistyorini et al., 2025), MSME performance is a business achievement that can be strengthened by business strategy, technopreneurship, and the use of digital technology in business processes. According to (Novela Q.A et al., 2024), MSME performance is treated as a respondent-rated composite of perceived revenue growth, profitability, market share, and customer satisfaction, following the dimensions. Revenue and profit questions ask about increases relative to an unspecified earlier period. Therefore these responses should be read as perceptions of change, not financial records or longitudinal measurements; customer satisfaction is reported by the business respondent rather than independently surveyed customer satisfaction.

Marketplace

According to (Asyahuri et al., 2025), a marketplace is a digital platform that supports business actors in buying and selling activities and makes it easier for consumers to search, compare, and purchase products in one place online. According to (Sagala et al., 2023), a marketplace is a third party that connects sellers with buyers in a digital marketplace and offers various products from sellers. Unlike (An et al., 2023), who study consumer acceptance of mobile food-delivery applications, these questions use the culinary business operator's perspective. The actual questionnaire groups ten items into five dimensions: perceived usefulness, perceived ease, market reach, transaction support, and continuance of use. The dimensions are described from the administered questionnaire rather than inaccurately attributed as identical items by (An et al., 2023)

Accounting Information System

According to (Marwa & Ardila, 2024), an information system is a computer-based system designed to process accounting data into financial information for decision-making by external and internal parties. According to (Zam, 2023), an AIS is a system that processes data and transactions to generate information used to operate a business. AIS is operationalized as respondents' assessments of information produced through their business accounting processes. The eight questionnaire items represent broad scope, timeliness, aggregation, and integration, consistent with the information-characteristics perspective discussed by (Lopung & Rulindo, 2023). The questions do not establish whether the information is produced by computerized accounting software, a point-of-sale system, or manual records. This ambiguity is acknowledged as a measurement limitation rather than assuming every enterprise used software.

Digital Literacy

According to (Avinç & Doğan, 2024), digital literacy is defined as the ability to access, understand, evaluate, and utilize information when using digital technology. According

to (Reddy et al., 2023) digital literacy is understood as technical, procedural, and cognitive skills that encompass the use of technology and online communication, along with ethical and legal awareness on digital platforms. According to (Nainggolan et al., 2025), digital literacy is the ability to understand, use, and evaluate digital technology and critically evaluate the information received. Digital literacy is operationalized through eight self-assessment statements, two each for internet searching, hypertextual navigation, content evaluation, and knowledge assembly (Arninda et al., 2025), who draw on the Gilster tradition.

CONCEPTUAL FRAMEWORK

The conceptual framework was developed by the authors for this study based on the resource-based view and the cited construct literature:

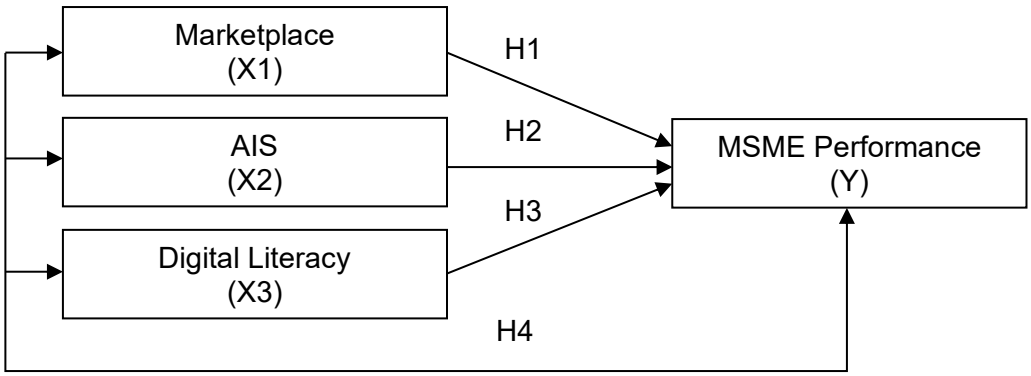


Figure 1. Conceptual Framework
Source: Research Results, 2026

H1: Marketplaces have a significant effect on the performance of MSMEs in Medan Timur District.
H2: Accounting Information Systems have a significant effect on the performance of MSMEs in Medan Timur District.
H3: Digital literacy has a significant effect on the performance of MSMEs in Medan Timur District.
H4: The regression model containing marketplaces, Accounting Information Systems, and digital literacy is statistically significant overall; that is, at least one predictor coefficient differs from zero.

RESEARCH METHOD

This study employed a quantitative approach using primary data collected through questionnaires distributed to culinary MSME operators in Medan Timur District from August to September, 2026. Based on BPS Kota Medan Timur, 2025, the population consisted of 159 MSMEs whom 80 were selected through purposive sampling based on specified criteria and one response per employee. Each selected business met the study's eligibility criteria: located in the Medan Timur Distict, using a marketplace, using AIS, and digital literated in business operations. The 34 positively worded statements were rated a five point likert scale from 1-5 (strongly agree to disagree). No items were reverse-scored. Data were analyzed using IBM SPSS.

Table 1.
Sample Criteria Table

No.	Sample Selection Criteria	Number of Respondents
1	Culinary MSMEs located in the Medan Timur District	159
2	Culinary MSMEs not partnered with a marketplace	(48)
3	Culinary MSMEs not utilizing an Accounting Information System	(21)
4	Culinary MSMEs not using digitalization in business operations	(10)
Total Sample		80

Source: Research Results, 2026

Prior to the main analysis, validity and reliability tests were conducted on 30 respondents outside the sample. The data were then analyzed using classical assumption tests (normality, multicollinearity, and heteroscedasticity), multiple linear regression, hypothesis testing (partial and simultaneous), and the coefficient of determination.

RESULTS

Validity Test

According to (Ghozali, 2021), the validity test is used to measure the validity of a questionnaire.Item-level Pearson correlations were recomputed using the separate n = 30 pilot workbook. Table 2 reports corrected item–total correlations, in which the focal item is removed from its comparison total. Values range from 0.564 to 0.907 and exceed the stated r critical value of 0.361 for n = 30 at a two-sided 5% level (df = 28). The correlations support item discrimination in this pilot but do not establish content validity, unidimensionality, or equivalence of the five distinct X1 dimensions.

Table 2.
Validity Test Results

Statement	**Corrected item-total r**	**Critical r**	**Results**
Marketplace			
1	0.598	0.361	Meets item-screening criterion
2	0.786	0.361	Meets item-screening criterion
3	0.777	0.361	Meets item-screening criterion
4	0.875	0.361	Meets item-screening criterion
5	0.715	0.361	Meets item-screening criterion
6	0.757	0.361	Meets item-screening criterion
7	0.858	0.361	Meets item-

Statement	**Corrected item-total r**	**Critical r**	**Results** screening criterion
8	0.700	0.361	Meets item-screening criterion
9	0.867	0.361	Meets item-screening criterion
10	0.564	0.361	Meets item-screening criterion
AIS			
1	0.743	0.361	Meets item-screening criterion
2	0.818	0.361	Meets item-screening criterion
3	0.905	0.361	Meets item-screening criterion
4	0.756	0.361	Meets item-screening criterion
5	0.881	0.361	Meets item-screening criterion
6	0.770	0.361	Meets item-screening criterion
7	0.875	0.361	Meets item-screening criterion
8	0.606	0.361	Meets item-screening criterion
Digital Literacy			
1	0.837	0.361	Meets item-screening criterion
2	0.772	0.361	Meets item-screening criterion
3	0.772	0.361	Meets item-screening criterion
4	0.816	0.361	Meets item-screening criterion
5	0.771	0.361	Meets item-screening criterion

Statement	**Corrected item-total r**	**Critical r**	**Results**
6	0.725	0.361	Meets item-screening criterion
7	0.815	0.361	Meets item-screening criterion
8	0.700	0.361	Meets item-screening criterion
MSME Performance			
1	0.755	0.361	Meets item-screening criterion
2	0.656	0.361	Meets item-screening criterion
3	0.876	0.361	Meets item-screening criterion
4	0.907	0.361	Meets item-screening criterion
5	0.710	0.361	Meets item-screening criterion
6	0.878	0.361	Meets item-screening criterion
7	0.848	0.361	Meets item-screening criterion
8	0.888	0.361	Meets item-screening criterion

Source: Research Results, 2026 (Processed Data)

All 34 corrected item–total correlations exceeded 0.361 in the supplied 30-person pilot. These coefficients differ from the uncorrected item–full-total correlations previously displayed; the table and method description have been aligned. The separate dimensions of Marketplace utilization and their construct coherence still require substantive appraisal in the study.

Reliability Test

According to (Ghozali, 2021), the reliability test is used to assess a questionnaire serving as an indicator of a variable or construct. A Cronbach's alpha value greater than 0.60 indicates reliability. The test results are as follows:

Table 3.
Reliability Test Results

Variabel	Cronbach's Alpha	N of Items
Marketplace	0.933	10

AIS	0.941	8
Digital Literacy	0.935	8
MSME Perfomance	0.950	8

Source: Research Results, 2026 (Processed Data)

The alpha coefficients show high within-scale consistency among the 30 pilot responses, not demonstrated stability over time or structural/criterion validity. The multidimensional content of X1 should be interpreted as a composite business-perception score. Thus, it can be concluded that all variables in this study possess an acceptable level of reliability, and all statement items are deemed reliable for use in the research.

Descriptive Statistics

According to (Ghozali, 2021), descriptive statistics provide a description or overview of data based on variance, maximum, minimum, sum, range, standard deviation, mean, kurtosis, and skewness. In this study, the descriptive statistics employed are the mean, standard deviation, maximum, and minimum.

Table 4.
Descriptive Statistics

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Marketplace	80	23	42	31.35	5.304
AIS	80	17	37	26.21	5.374
Digital Literacy	80	16	37	26.75	4.898
MSME Perfomance	80	17	37	26.56	5.160
Valid N (listwise)	80				

Source: Research Results, 2026 (Processed Data)

Table 6 presents variations in the minimum, maximum, mean, and standard deviation values across the four research variables, with marketplace having the highest mean score.

Normality Test

Regression inference concerns the distribution of residuals, not a requirement that each observed X or Y variable be normally distributed. Original visual diagnostics included a normal P–P plot and a histogram of residuals (Figures 2–3), followed by a one-sample Kolmogorov–Smirnov test with a Lilliefors correction.

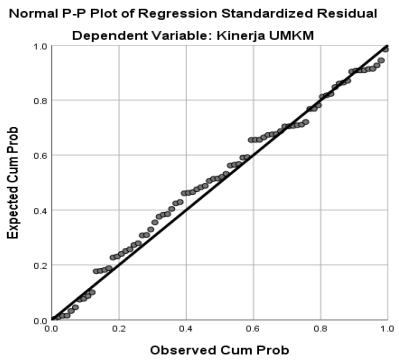


Figure 2. *Normal P–P Plot of Regression Residuals*
Source: Research Results, 2026 (Processed Data)

Based on Figure 2 above, it is evident that the data points are distributed along the diagonal line. These test results indicate that the data are normally distributed. Source: Processed research data, 2026

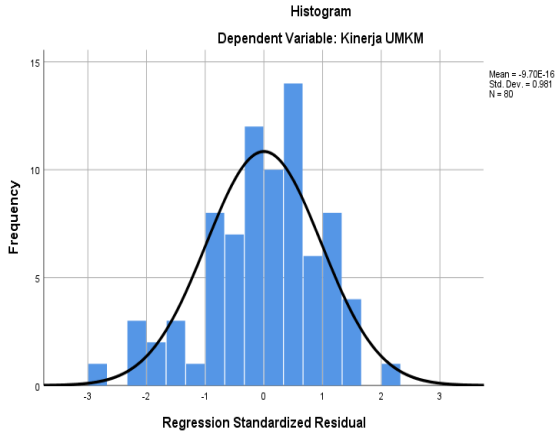


Figure 3. Histogram Graphic
Source: Research Results, 2026 (Processed Data)

Based on Figure 3 above, it can be explained that the data forms a curve that tends to be symmetrical around the mean (μ). These test results indicate that the data is normally distributed.

The results of the normality test using the One-Sample Kolmogorov-Smirnov test are presented below:

Table 5.
One-Sample Kolmogorov Smirnov Results

		Unstandardized Residual
N		80
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	3.43868917
Most Extreme Differences	Absolute	.073
	Positive	.045
	Negative	-.073
Test Statistic		.073
Asymp. Sig. (2-tailed)		.200[c,d]

a. Test distribution is Normal.
b. Calculated from data.
c. Lilliefors Significance Correction.
d. This is a lower bound of the true significance.
Source: Research Results, 2026 (Processed Data)

Based on the table above, the Kolmogorov-Smirnov normality test results demonstrate a significance value of 0.200—which is greater than 0.05—leading to the conclusion that the data are normally distributed.

Heteroskedasticity Test

The heteroskedasticity test is used to determine whether residual variance remains constant throughout the study (Mills, 2014). The results of the heteroskedasticity analysis in this study are presented in the following table.

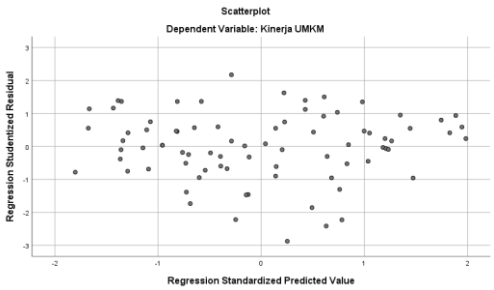


Figure 4. Scatterplot Grafic
Source: Research Results, 2026 (Processed Data)

No clear funnel-shaped residual pattern is apparent in the archived Figure 4. This observation is insufficient on its own to establish homoskedasticity throughout the fitted range.

Multicollinearity Test
The multicollinearity test is conducted to determine whether there is a high linear relationship between independent variables (Kim, 2019). The results of the multicollinearity test are shown in the following table:

Table 6.
MulticollinearityTest Results

Model		Collinearity Statistics Tolerance	VIF
1	(Constant)		
	Marketplace	.695	1.438
	AIS	.684	1.462
	Digital Literacy	.978	1.022

a. Dependent Variable: MSME Perfomance
Source: Research Results, 2026 (Processed Data)

Based on the table above, it is evident that all variables have tolerance values greater than 0.1 and VIF values less than 10; thus, it can be concluded that no issues regarding multicollinearity were found.

Multiple Linear Regression Analysis
Multiple linear regression examines a regression model involving more than one independent variable (Wahyuni, 2024). The results of the data processing using multiple linear regression analysis are presented in the following table.

Table 7.
Original Multiple Regression Coefficients (n = 80)

Model		Unstandardized Coefficients		Standardized Coefficients
		B	Std. Error	Beta
1	(Constant)	1.235	3.128	
	Marketplace	.200	.089	.206
	AIS	.545	.089	.568
	Digital Literacy	.178	.081	.169

Dependent variable: Perceived MSME Performance (sum of eight Likert items).
Source: Research Results, 2026 (Processed Data)

Fitted Y score = 1.235 + 0.200(X1 Marketplace) + 0.545(X2 AIS) + 0.178(X3 Digital Literacy).

Based on the equation above, the breakdown is as follows:

1. The intercept, 1.235, is a fitted-model parameter at zero predictor scores; a zero total is outside the attainable scale ranges, so the intercept has no direct business interpretation.
2. Holding X2 and X3 constant, a one-point higher X1 score corresponds to a predicted Y score 0.200 points higher; this observational coefficient does not demonstrate that marketplace use caused an improvement.
3. Holding X1 and X3 constant, a one-point higher AIS score corresponds to a predicted Y score 0.545 points higher, conditional on the model and the survey scores.
4. Holding X1 and X2 constant, a one-point higher self-reported digital-literacy score corresponds to a fitted Y score 0.178 points higher in the reported n = 80 SPSS regression

Partial Hypothesis Testing (t-test)

The t-test is used to determine the partial effect of each independent variable on the dependent variable (Watts, 2022). The results of the partial hypothesis testing are presented in the following table:

Table 8.
Partial Hypothesis Results

Model		t	Sig.
1	(Constant)	.395	.694
	Marketplace	2.247	.028
	AIS	6.144	<.001
	Digital Literacy	2.181	.032

a. Dependent Variable:MSME Perfomance
Source: Research Results, 2026 (Processed Data)

For n = 80 and three predictors, the residual degrees of freedom are 80 − 3 − 1 = 76; the two-sided critical t at α = 0.05 is approximately 1.991. Each t-test evaluates one regression coefficient conditional on the other predictors. Marketplace is positively associated with performance (B = 0.200, t = 2.247, p = 0.028); AIS is positively associated (B = 0.545, t = 6.144, p < 0.001); and digital literacy is positively associated (B = 0.178, t = 2.181, p = 0.032). The reported results support H1, H2, and H3, respectively, under the stated significance criterion.

Simultaneous Hypothesis Test (F-Test)

The F-test is used to examine the simultaneous effect of independent variables on the dependent variable (Greenwood, 2022). Data are considered significant if the significance value is less than α (Wahyuni, 2018). The results of the F-test are presented in the following table.

Table 9.
Simultaneous Hypothesis Results

Model		F	Sig.
1	Regression	31.717	<0.001
	Residual		
	Total		

Model	F	Sig.

a. Dependent Variable: MSME Performance
b. Predictors: (Constant), Digital Literacy, Marketplace, AIS
Source:

The original F(3, 76) = 31.717, p < 0.001 supports rejection of the overall null model (H4).

Coefficient of Determination

The coefficient of determination is used to determine the proportion of the variation in the dependent variable that can be explained by the independent variables (Gao, 2024). The value of the coefficient of determination ranges from 0 to 1.

Table 10.
Coefficient of Determination Results

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.746[a]	.556	.538	3.506

a. Predictors: (Constant), Digital Literacy, AIS, Marketplace
b. Dependent Variable: MSME Perfomance
Source: Research Results, 2026 (Processed Data)

The originally reported $R^2 = 0.556$ indicates that the model accounts for approximately 55.6% of observed variation in Y scores in the fitted sample. Adjusted $R^2 = 0.538$ is a separate model-fit summary. While, it is not a known 44.4% causal influence of unspecified factor.

Variable Contribution

Variable contribution indicates the magnitude of an independent variable's unique contribution to the regression model (Lane, 2003). In addition to the R-squared value, this analysis also reveals the strength of the influence exerted by each independent variable.

Table 11.
Variable Contribution Results

Variabel	**Standardized Coefficents Beta**	**Koefisien Korelasi**
Marketplace	0.206	0.532
AIS	0.568	0.706
Digital Literacy	0.169	0.268

Source: Research Results, 2026 (Processed Data)

Using the reported standardized coefficients and zero-order correlations, the products are: Marketplace, 0.206 × 0.532 = 0.1096; AIS, 0.568 × 0.706 = 0.4010; and digital literacy, 0.169 × 0.268 = 0.0453. Their sum is approximately 0.5559, which is close to the model R^2 of 0.556, subject to rounding. These values are an allocation of explained variance under this calculation, not unique predictor contributions.

1. Marketplace = 0.206 × 0.532 = 0.1096
2. Accounting Information System = 0.568 × 0.706 = 0.4010
3. Digital Literacy = 0.169 × 0.268 = 0.0453
4. Simultaneous contribution = 0.1096 + 0.4010 + 0.0453 = 0.5559

The reported beta–correlation products allocate approximately 0.1096 of R^2 to Marketplace, 0.4010 to AIS, and 0.0453 to digital literacy. AIS has the largest allocated share in this decomposition. Because the predictors may be correlated, these values

should not be described as unique effects. The allocation should be retained only after confirming that the zero-order correlations use the same cases and model as the standardized coefficients.

DISCUSSION

The Influence of Marketplaces on MSME Performance in Medan Timur District

The conditional regression coefficient for Marketplace is positive and statistically significant (B = 0.200, t = 2.247, p = 0.028), holding AIS and digital literacy constant. This means that a one-unit higher Marketplace score is associated with an estimated 0.200-unit higher performance score in the model; it does not demonstrate a causal improvement. This finding is related to, but not directly equivalent to, studies of marketplace adoption, readiness, or e-commerce performance (Ballerini et al., 2023; Gonçalves et al., 2024; Santoso et al., 2022)which use different constructs and contexts. The current manuscript does not report which platforms respondents used or which features they used. Customer reach, promotion, and transaction access are therefore possible mechanisms discussed in prior literature, not measured findings of this survey.

The Influence of Accounting Information Systems on MSME Performance in Medan Timur District

The research results indicate a significant conditional association between AIS-information characteristics and perceived MSME performance in Medan Timur District. This is evidenced by a calculated t-value of 6.144—exceeding the t-table value of 1.991—and a significance $p < 0.001$. The coefficient B = 0.545 represents a conditional association between the AIS- information-characteristics score and perceived MSME performance. This coefficient is a conditional association, not evidence that a higher AIS implementation level causes higher performance. AIS provides information for business recording, planning, control, and decision-making. These findings align with (Hariyati et al., 2022), who demonstrated that management accounting information systems can serve as a means to enhance MSME performance. (Lopung & Rulindo, 2023) further showed that the broad scope and timeliness of AIS influence MSME performance. Accurate accounting information enables MSME owners to understand their financial position, control costs, manage revenue, and plan business activities. Consequently, the more effectively an Accounting Information System is implemented, the greater the MSME's capacity to improve its business performance.

The Influence of Digital Literacy on MSME Performance in Medan Timur District

The research results indicate that digital literacy has a significant influence on MSME performance in Medan Timur District. This is evidenced by a calculated t-value of 2.181—exceeding the t-table value of 1.991—and a significance value of 0.032, which is below the 0.05 threshold. The regression coefficient of 0.178 demonstrates the direction of digital literacy's influence on MSME performance; specifically, a one-unit increase in digital literacy leads to a 0.178-unit increase in MSME performance, assuming marketplace usage and accounting information systems remain constant. Digital literacy enables business owners to utilize technology for marketing, customer service, information gathering, business management, and innovation. These findings align with (Novela Q.A et al., 2024), who identified digital literacy as a factor that can drive MSME performance, and (Wediawati et al., 2025), who found that digital literacy significantly impacts MSME performance. Business owners with strong digital skills tend to be adept at selecting relevant information and using platforms efficiently. Such capabilities assist MSMEs in navigating competition and adapting to changes in the business environment. Consequently, enhancing digital literacy serves as a key factor in boosting MSME performance.

The overall model is statistically significant, $F(3, 76) = 31.717$, $p < 0.001$, supporting H4: at least one of the three predictor coefficients differs from zero. The partial tests separately support H1–H3. Studies of marketplace sales outcomes (Masful et al., 2025) and the descriptive case examined by (Ananda & Kurniawati, 2023)are not direct tests of this three-predictor model; the latter reports limited sales impact in its observed case and should not be characterized as a nonsignificant statistical test. $R^2 = 0.556$, while adjusted $R^2 = 0.538$. Thus, the model accounts for 55.6% of sample variation in performance scores; the remaining 44.4% may reflect omitted factors, measurement error, and random variation. Because the data are cross-sectional and perception-based, the results should be interpreted as associations, not evidence of improvement over time, sustained growth, or synergy among predictors.

CONCLUSION

The retained SPSS analysis of 80 purposively sampled culinary businesses in Medan Timur District reports positive conditional associations of marketplace use ($B = 0.200$, $p = 0.028$), AIS-information characteristics ($B = 0.545$, $p < 0.001$), and self-rated digital literacy ($B = 0.178$, $p = 0.032$) with perceived MSME performance. The overall regression is reported as $F(3,76) = 31.717$, $p < 0.001$, with $R^2 = 0.556$ and adjusted $R^2 = 0.538$. AIS has the largest standardized coefficient (beta = 0.568), not a proven causal effect. The study team describes purposive attention to businesses more directly affected by digitalization in several locations, but their site list, impact classification, and individual screening records were not included in the supplied files. The single-period self-report design cannot establish sustained sales growth, objective financial improvement, or population-wide representative.

RECOMMENDATIONS

The findings should be interpreted as associations among 80 purposively selected culinary MSMEs that used marketplace, accounting, and digital tools in Medan Timur District. Because the sample was non-probability based and limited to this sector and district, the results may not represent other businesses or locations. The variables were measured through respondents' perceptions in one survey period; they do not establish actual improvement or sustained growth. Recommendations can be implemented and evaluated in stages. First, business owners can keep regular records of orders, sales, costs, and cash flow, then use timely accounting summaries in routine decisions. Second, business-support programs can provide practical training in marketplace operations, digital information evaluation, and basic accounting tools, with content tailored to operators' needs. Third, businesses and researchers can assess these practices using baseline and follow-up indicators such as recorded sales, profit, order volume, and repeat customers over a defined period; comparison with similar businesses would strengthen the assessment. These are proposed actions for evaluation, not outcomes guaranteed by this study.

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