



The Impact of E-Commerce Adoption on Sales Volume of Micro, Small, and Medium Enterprises in Banjarmasin City

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ABSTRACT

This study aims to empirically analyze the effect of e-commerce adoption on the sales volume of Micro, Small, and Medium Enterprises (MSMEs) in Banjarmasin City. This quantitative study, using a causal associative design, involved 100 MSME respondents who had adopted e-commerce and were selected through purposive sampling. Data were collected through a structured questionnaire and analyzed using simple linear regression. The results show that e-commerce adoption has a positive and significant effect on the sales volume of MSMEs in Banjarmasin City ($t_{\text{calculated}} = 12.762 > t_{\text{table}} = 1.984$; $p = 0.000$). The regression equation $Y = 3.852 + 0.536X$ indicates that each one-unit increase in e-commerce adoption has a corresponding positive impact on sales volume. The coefficient of determination (R^2) of 0.624 shows that e-commerce adoption contributes 62.4% in explaining the variation in increased sales volume, while the remaining 37.6% is influenced by factors outside the model. Expanding consumer reach is the indicator with the most dominant impact in overcoming geographical limitations. The practical implications emphasize the importance of optimizing interactive promotion by business actors, as well as ongoing digitalization training support from local government

INTRODUCTION

Micro, Small, and Medium Enterprises (MSMEs) have a strategic position in the economy because they play a role in creating jobs, increasing household income, and driving economic activity at the regional level. As the business environment becomes increasingly competitive, MSMEs are not only expected to produce products that meet consumer needs, but also to adapt to changes in technology and consumer behavior. Shifts in consumption patterns, with more people using digital technology to search for product information, communicate with sellers, make transactions, and access services, are encouraging MSME owners to develop more adaptive marketing and sales approaches.

One form of this adaptation is the use of electronic commerce (e-commerce). E-commerce allows businesses to carry out marketing, communicate with consumers, take orders, and complete transactions through electronic networks. For MSMEs, using e-commerce creates opportunities to expand market reach without being fully dependent on a physical business location. By leveraging marketplaces, online stores, social media integrated with transactions, and various digital payment systems, MSMEs can reach a broader customer base, increase product visibility, and create new sales channels.

This context is becoming even more relevant for MSMEs in Banjarmasin City. Based on information from the Banjarmasin City Office of Cooperatives, Micro Enterprises, and Labor, as reported by RRI in February 2026, the number of MSMEs in Banjarmasin City was recorded at around 26,824 units, with nearly 22,000 of them classified as micro enterprises. The dominant business sectors include culinary, fashion, and crafts. These data show that MSMEs are an important part of the economic activity of the people of Banjarmasin City and also have significant market potential to be developed through the use of digital technology.

The large number of MSMEs also presents challenges in terms of business owners' ability to adapt to technological developments. The Banjarmasin City Government has made various efforts to encourage the digital transformation of MSMEs. In 2023, for example, the Banjarmasin City Office of Cooperatives, Micro Enterprises, and Labor held digital marketing strengthening training for micro business owners. The local government stated that digital marketing can open access to a wider customer base, but at the same time there are still business owners who have difficulty understanding technology, so their ability to carry out digital marketing is not yet optimal.

This issue shows that the digitalization process of MSMEs in Banjarmasin City cannot be assessed solely by how many business owners already have social media accounts or have joined digital platforms. What matters more is the extent to which the technology is truly adopted and used in business activities, especially in marketing and sales. This is consistent with Miranda's (2025) study on e-commerce acceptance among MSMEs in Banjarmasin City. The study involved 396 MSME owners in Banjarmasin City and specifically analyzed e-commerce acceptance and use using the Technology Acceptance Model (TAM). The study showed that e-commerce has become part of the digital transformation

of MSMEs in Banjarmasin City and is relevant to efforts to expand markets and improve business efficiency.

The digitalization effort continues. In June 2026, the Ministry of MSMEs, together with Grab and OVO, held the Future City Program: Dare to Go Digital in Banjarmasin, aimed at accelerating MSME digitalization through training, business support, access to digital financing, and the use of technology. The program was designed not only to get MSMEs onto online platforms, but also to use technology to improve productivity, product visibility, financial management, and business competitiveness. In fact, 25 selected MSMEs received capital support through the program.

This situation shows that the government and various stakeholders have encouraged Banjarmasin MSMEs to enter the digital ecosystem. However, simply being present on digital platforms does not automatically mean that digitalization has led to higher sales. Business owners may have marketplace or social media accounts, but their level of use can vary widely. Some may use e-commerce only to display products, while others have used it to receive orders, promote products, manage transactions, communicate with customers, and expand their market reach. Therefore, it is necessary to determine whether the level of e-commerce adoption truly affects the sales results obtained by MSMEs.

Issues of digital literacy and the ability to use technology are also a concern in the context of Banjarmasin MSMEs. A community service research project involving 23 assisted MSMEs in Banjarmasin and Barito Kuala found that MSME operators were still facing digital literacy problems in managing online stores and cashier systems. After receiving training, understanding of e-commerce increased from 45% to 85%, the ability to operate the platform increased from 40% to 90%, and understanding of inventory and transaction management increased from 35% to 88%. These findings show that the ability to use technology is an important aspect of MSME digital transformation.

From the local government's perspective, MSME digitalization has also become an agenda that continues to be developed. The Banjarmasin City Government had previously provided outreach on promotion and marketing via the internet for MSMEs throughout Banjarmasin. The program was intended to increase MSME operators' understanding of product marketing through the internet. In addition, the Banjarmasin City Government also has an eUMKM application used for MSME data collection and training in the Banjarmasin area. This situation shows the existence of a digital-support ecosystem for MSME digitalization that is increasingly developing at the local level.

Theoretically, the relationship between technology adoption and the benefits gained by business owners can be explained through Rogers' Diffusion of Innovations Theory (2003). This theory explains that the acceptance of an innovation is influenced by the innovation's perceived characteristics, namely relative advantage, compatibility, complexity, trialability, and observability. In the context of MSMEs, e-commerce will be easier to adopt if business owners see advantages over conventional sales methods, if it fits their business needs, is easy to use, can be tried, and produces observable results. Thus, the greater the

perceived benefits of e-commerce, the more likely business owners are to use it more intensively.

In addition to Innovation Diffusion Theory, e-commerce adoption can be explained through the Technology–Organization–Environment (TOE) Framework developed by Tornatzky and Fleischer (1990). The TOE framework explains that an organization's decision to adopt technology is influenced by technological, organizational, and environmental contexts. In the context of MSMEs in Banjarmasin City, the technological context may relate to the ease and benefits of e-commerce; the organizational context may relate to the readiness of resources and the capabilities of business actors; while the environmental context may relate to business competition, changes in consumer behavior, government support, and the development of the digital ecosystem.

Empirically, the relationship between e-commerce adoption and MSME performance has been demonstrated by a number of studies. Rahayu and Day (2017), through research on 292 SMEs in Indonesia, found that the most widely felt benefits of e-commerce adoption were expanded market reach and increased sales. The study also showed that SMEs with higher levels of e-commerce adoption tended to gain greater benefits than SMEs with lower levels of adoption. This finding is important because it shows that the effect of e-commerce is not only related to the decision to use technology, but also to the level and depth of its use.

Yacob et al. (2021) also found that e-commerce adoption affects the sustainability of MSME business performance in Indonesia. The results show that e-commerce can be part of MSMEs' business strategies to maintain and improve business performance. Meanwhile, Wirdiyanti et al. (2023), through research on 338 MSMEs using e-commerce in 10 provinces in Indonesia, showed a relationship between e-commerce adoption and improved MSME performance, including through increased brand recognition and customer awareness.

A more recent review by Rahmawati et al. (2025), based on a systematic literature review of 23 articles from the 2013–2024 period, showed that e-commerce adoption among MSMEs is associated with a number of business benefits, such as increased sales, market expansion, operational efficiency, and improved business performance. The review also showed that technological, organizational, and environmental factors are important aspects in explaining e-commerce adoption among MSMEs.

Although previous studies have widely demonstrated the relationship between e-commerce adoption and MSME performance, there is still important research space to be examined, especially among MSMEs in Banjarmasin City. Research on e-commerce acceptance among MSMEs in Banjarmasin City has been conducted, such as Miranda's (2025) study, but that study focused on acceptance and use of e-commerce based on the TAM approach. Thus, research specifically examining the impact of e-commerce adoption on the sales volume of MSME actors in Banjarmasin City is still needed. The context of Banjarmasin City is increasingly interesting because in 2026 the government and various parties are still actively encouraging MSME digitalization. In fact, in July 2026, the Banjarmasin City Office of Cooperatives, Micro Enterprises, and Manpower

was still carrying out a series of MSME digitalization training programs. In August 2026, the National MSME Day Partnership Forum in Banjarmasin also raised the theme of digital connectivity and capital access as part of efforts to encourage MSMEs to become more adaptive, innovative, competitive, and developed. This shows that MSME digital transformation in Banjarmasin is an ongoing phenomenon that remains relevant for research.

LITERATURE RIVIEW

1. Innovation Diffusion Theory

One theory that can be used to explain e-commerce adoption is the Diffusion of Innovations Theory developed by Rogers (2003). This theory explains how an innovation is communicated and accepted by members of a social system over a certain period of time. Rogers proposed five characteristics of innovations that affect the level of acceptance of an innovation, namely:

- Relative advantage, the extent to which an innovation is seen as offering benefits compared with the previous way of doing things.
- Compatibility, the extent to which an innovation fits users' needs, experiences, and values.
- Complexity, the degree of difficulty of an innovation to understand and use.
- Trialability, the extent to which an innovation can be tried out first.
- Observability, the extent to which the benefits of using the innovation can be observed.

In the context of MSMEs, e-commerce can be viewed as an innovation that provides relative advantage if it can expand markets, increase the number of customers, make transactions easier, and boost sales. The greater the perceived benefits, the more likely MSME actors are to adopt and use e-commerce more intensively.

2. Micro, Small, and Medium Enterprises (MSMEs)

Micro, Small, and Medium Enterprises (MSMEs) are a main pillar of Indonesia's economy, with a strategic role in job creation, income distribution, and driving national economic growth (Tambunan, 2019). Under Law No. 20 of 2008 on MSMEs, and the updated criteria in Government Regulation No. 7 of 2021, business scale is classified by business capital or annual sales revenue.

Although they are highly flexible and resilient in times of crisis, MSMEs in developing countries often face limitations in market access, operational efficiency, capital, and information technology mastery (Rahayu & Day, 2015). Strengthening operational capacity through technological modernization is crucial for MSMEs to remain competitive amid changing market dynamics.

MSMEs are grouped based on two main indicators: business capital (excluding land and buildings) for initial establishment or business licensing, and annual sales revenue (turnover) to measure ongoing operational scale. Under the regulation, MSMEs are classified into three categories:

- a. Micro Enterprise: A productive business owned by an individual or a sole proprietorship with business capital of up to Rp1 billion and annual sales revenue of up to Rp2 billion.

- b. Small Enterprise: An independent productive economic business with business capital above Rp1 billion up to Rp5 billion, and annual turnover above Rp2 billion up to Rp15 billion.
- c. Medium Enterprise: A business with business capital above Rp5 billion up to Rp10 billion and annual turnover above Rp15 billion up to a maximum of Rp50 billion (Government of the Republic of Indonesia, 2020).

3. E-Commerce Adoption

Electronic Commerce (E-Commerce) is defined as the process of buying, selling, or exchanging goods, services, and information through computer networks, especially the internet (Turban et al., 2018). E-commerce adoption by MSME actors includes the use of online platforms (such as marketplaces, social media, or standalone websites) to support various business functions, from marketing and order processing to after-sales service.

In explaining MSMEs' decisions to adopt digital technology, there are two main theoretical frameworks that are often used:

a. Technology Acceptance Model (TAM): Developed by Davis (1989), TAM explains that technology adoption is strongly influenced by two main perceptions, namely:

- 1) Perceived Ease of Use: The extent to which business actors believe that using e-commerce does not require complicated effort.
- 2) Perceived Usefulness: The extent to which business actors believe that the technology will improve their business performance.

b. Technology-Organization-Environment (TOE) Framework: Tornatzky and Fleischer (1990) state that the adoption of technological innovation is influenced by three main contexts:

- 1) Technological Context: The availability and reliability of e-commerce features.
- 2) Organizational Context: The readiness of human resources, capital, and business infrastructure.
- 3) Environmental Context: Competitive market pressure, changes in consumer behavior, and government regulatory support.

4. Sales Volume

Sales volume is the total number of units of a product or service successfully sold by a company within a certain period of time (Kotler & Keller, 2016). According to Swastha (2014), sales volume is a direct indicator of the success of marketing activities and the operational efficiency of a business. The higher the sales volume, the greater the revenue received by the business.

In the context of MSMEs, sales volume is measured not only by increases in the number of product units sold, but can also be indicated through:

- Expansion of geographic market reach.
- Increased transaction frequency.
- Customers' repeat purchase rate.

METHODOLOGY

This study uses a quantitative approach with a causal associative research design. This approach was chosen to empirically test and measure the extent of the influence of the independent variable, namely e-commerce adoption, on the dependent variable, namely sales volume in Micro, Small, and Medium Enterprises (MSMEs) in Banjarmasin City. The population in this study includes all MSME actors in Banjarmasin City who have adopted e-commerce platforms (such as marketplaces, social media, or websites) in their business operations. Considering that the exact number of the MSME population that actively adopts e-commerce is unlimited or not known with certainty (infinite population), the sample size was calculated using the Lemeshow formula as follows:

$$n = \frac{Z^2 \cdot p \cdot q}{e^2}$$

Keterangan:

n = *required sample size*

Z = *confidence level* (1.96 at $\alpha = 0.05$)

p = *estimated population proportion* (0.5)

q = $1 - p$ (0.5)

e = *margin of error* (10% or 0.10)

Based on this calculation, a minimum sample size of 96.04 was obtained, which was then rounded up to 100 MSME respondents to improve data representativeness. The sampling technique used was non-probability sampling with a purposive sampling method. The sample inclusion criteria included:

1. Business owners who were registered in or domiciled in Banjarmasin City,
2. Classified as MSMEs, and
3. Had continuously used e-commerce as a sales channel for at least 6 months.

Primary data were collected through the distribution of structured questionnaires to MSME owners or managers in Banjarmasin City. The questionnaire was designed using a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). In addition to primary data, this study used secondary data in the form of MSME statistical data from relevant agencies such as the Banjarmasin City Office of Cooperatives, Micro Enterprises, and Manpower, as well as publications from the Central Statistics Agency (BPS).

The data analysis technique used the SPSS application, with simple linear regression analysis as the method employed. The data analysis procedure was carried out in stages, starting with descriptive analysis, validity and reliability tests, classical assumption tests, simple linear regression analysis, hypothesis testing, and the coefficient of determination test.

RESULT

A. Description of Respondent Characteristics

Data collection was conducted on 100 micro, small, and medium enterprise (MSME) actors in Banjarmasin City who served as the sample in this study. Respondent characteristics were identified based on four main criteria: gender, type of business (industry sector), length of e-commerce use, and business category.

1. Respondent Gender

Table 1. Frequency distribution of respondents by gender

No.	Gender	Frequency (People)	Percentage (%)
1	Male	42	42
2	Female	58	58
Total		100	100

Based on Table 1, the majority of MSME actors adopting e-commerce in Banjarmasin City were women, totaling 58 people (58.0%), while male respondents numbered 42 people (42.0%). This shows the high level of women's involvement in managing micro and small businesses at the local level, especially in utilizing digital platforms.

2. Business Category

The grouping of business scale refers to the respondents' turnover and business asset criteria, which are classified into Micro Enterprises and Small Enterprises.

Table 2. Distribution of Respondents by Business Category

No.	Business Category	Frequency (Businesses)	Percentage (%)
1	Micro Enterprises	73	73
2	Small Enterprises	27	27
Total		100	100

The data in Table 2 show that the majority of respondents are at the Micro Enterprise scale, totaling 73 businesses (73.0%), while Small Enterprises account for 27 businesses (27.0%). The high percentage of micro businesses reflects the economic structure of MSMEs in Banjarmasin City, which is dominated by individual or family-run businesses that use e-commerce to expand market access without requiring large initial capital.

3. Type of Business (Industry Sector)

Details of the business fields or sectors run by the respondents are presented below:

Table 3. Distribution of Respondents by Type of Business

No.	Type of Business	Frequency (Businesses)	Percentage (%)
1	Culinary (Food & Beverages)	45	45
2	Fashion & Apparel	30	30
3	Handicrafts (Craft) & Souvenirs	13	13
4	Services & General Trade	12	12
Total		100	100

Table 3 shows that the Culinary (Food & Beverages) sector dominated the respondents, with a total of 45 businesses (45.0%), followed by the Fashion & Apparel sector with 30 businesses (30.0%). Local Banjarmasin Handicrafts/Souvenirs accounted for 13 businesses (13.0%), and Services/General Trade made up 12 businesses (12.0%). The dominance of the culinary and fashion sectors is in line with urban e-commerce and social media adoption trends, which rely heavily on fast delivery service efficiency and digital product visualization.

4. Length of E-Commerce Use

The respondents' experience and duration of operating e-commerce as a sales channel are presented in Table 4.

Table 4. Distribution of Respondents by Length of E-Commerce Use

No.	Length of Use	Frequency (Businesses)	Percentage (%)
1	6 months – 1 year	22	22
2	> 1 year – 3 years	51	51
3	> 3 years	27	27
Total		100	100

Based on Table 4, most respondents have adopted e-commerce for a period of more than 1 to 3 years, namely 51 businesses (51.0%). Respondents who have used it for more than 3 years totaled 27 businesses (27.0%), while the new user group (6 months–1 year) consisted of 22 businesses (22.0%). This indicates that the majority of MSME actors in Banjarmasin City are quite experienced and have a mature operational understanding of managing sales through digital platforms.

B. Description of Respondents' Answers

1. Description of Respondents' Answers for Variable X (E-Commerce Adoption)

Based on the processed tabulation data from 100 respondents, the responses of MSME actors in Banjarmasin City to the indicators of e-commerce adoption are described as follows:

Table 5. Description of E-Commerce Adoption Variable Responses (X)

Indicator	Item Code	Item Score	Average	Indicator Average	Category
Ease of Use	X1.1	4,18		4,12	High
	X1.2	4,06			
Perceived Usefulness	X1.3	4,3		4,28	Very High
	X1.4	4,25			
Technology Accessibility	X1.5	4,1		4,05	High
	X1.6	3,99			
Transaction Efficiency	X1.7	4,26		4,26	Very High
	X1.8	4,26			
Overall Average of Variable X				4,18	High

From the table, overall, the E-Commerce Adoption variable received an average score of 4.18, which falls into the High category. The indicators with the highest scores were Perceived Usefulness (4.28) and Transaction Efficiency (4.26), both in the Very High category. This shows that MSME actors in Banjarmasin City experience the tangible benefits of e-commerce in speeding up transactions, reducing marketing costs, and simplifying payment and goods delivery systems. The Technology Accessibility indicator received the lowest average score, namely 4.05 (High category), with the lowest score on item X1.6 (3.99) related to customer service support. Although still rated well, this indicates that some MSME actors still face technical difficulties when responding to problems in the platform system.

2. Description of Respondents' Answers for Variable Y (Sales Volume)

An overview of respondents' answers regarding MSME sales volume achievements after utilizing e-commerce is presented in Table 4.6.

Table 6. Description of Results of Answers for Sales Volume Variable (Y)

Indicator	Item Code	Average Item Score	Average Indicator Score	Category
Quantity of Products Sold	Y1.1	4.15	4.15	High
	Y1.2	4.14		
Sales Revenue Growth	Y1.3	4.18	4.14	High
	Y1.4	4.1		
Expansion of Consumer Reach	Y1.5	4.39	4.22	Very High
	Y1.6	4.04		
Overall Average of Variable Y			4.17	High

Based on the table above, it is known that the sales volume variable as a whole obtained an average score of 4.17, which falls into the High category.

The Customer Reach Expansion indicator recorded the highest score, with an average of 4.22 (Very High), where item Y1.5 reached a score of 4.39. These findings prove that the most significant impact of using e-commerce for MSMEs in Banjarmasin City is its ability to break through geographical boundaries and reach buyers outside the local area. The Product Quantity Sold indicator (4.15) and Sales Turnover Growth indicator (4.14) are in the High category. This indicates that the expansion of market reach that occurs in parallel is directly proportional to the increase in units sold as well as the growth in daily and monthly gross income of MSME actors.

C. Validity and Reliability Test Results

The validity test is used to measure whether a questionnaire is valid or not. The test was conducted by comparing the calculated *r* value (Corrected Item-Total Correlation) with the *r* table value. For the sample size (*n*=100) at a significance level of $\alpha=0.05$, the *r* table value was 0.195. A statement item is declared valid if *r* calculated > *r* table (0.195).

Table 7. Validity Test Results for Variable X and Variable Y

Variable	Item Code	r _{calculated}	r _{table}	Description
E-Commerce Adoption (X)	X1.1	0.642	0.195	Valid
	X1.2	0.685	0.195	Valid
	X1.3	0.721	0.195	Valid
	X1.4	0.704	0.195	Valid
	X1.5	0.658	0.195	Valid
	X1.6	0.612	0.195	Valid
	X1.7	0.735	0.195	Valid
	X1.8	0.718	0.195	Valid
Sales Volume (Y)	Y1.1	0.698	0.195	Valid
	Y1.2	0.712	0.195	Valid
	Y1.3	0.745	0.195	Valid
	Y1.4	0.682	0.195	Valid
	Y1.5	0.729	0.195	Valid
	Y1.6	0.664	0.195	Valid

Based on Table 7, all statement items for the E-Commerce Adoption variable (X) (X1.1 to X1.8) have $r_{\text{calculated}}$ values ranging from 0.612 to 0.735, which are far above the r_{table} value (0.195). Likewise, for the Sales Volume variable (Y) (Y1.1 to Y1.6), the $r_{\text{calculated}}$ values range from 0.664 to 0.745 (>0.195). Thus, it can be concluded that all statement items in this study's questionnaire are valid and are able to measure the research variables accurately.

1. Reliability Test Results

The reliability test was conducted to measure the consistency of respondents' answers over time. This test used the Cronbach's Alpha (α) method. A variable is considered reliable if it has a Cronbach's Alpha value > 0.60 .

Table 8. Reliability Test Results for the Research Variables

Research Variable	Number of Items	Cronbach's Alpha	Critical Value	Remarks
E-Commerce Adoption (X)	8	0.864	0.6	Reliable
Sales Volume (Y)	6	0.842	0.6	Reliable

Based on Table 8, the E-Commerce Adoption variable (X) produced a Cronbach's Alpha value of 0.864, while the Sales Volume variable (Y) produced a Cronbach's Alpha value of 0.842. Because both Cronbach's Alpha values exceed the minimum threshold of 0.60, the questionnaire instrument used is proven to have a very good level of reliability and consistency (reliable), and is therefore suitable for use in the next inferential analysis stage.

D. Results of the Classical Assumption Tests

Classical assumption testing was conducted to ensure that the simple linear regression model used does not have bias issues, so that the estimation results obtained are Best Linear Unbiased Estimator (BLUE). In this simple linear regression study, the classical assumption tests include the normality test and the linearity test.

1. Results of the Normality Test

The normality test aims to determine whether, in the regression model, the disturbance or residual variable has a normal distribution. The test was carried out using the nonparametric statistical method of the One-Sample Kolmogorov-Smirnov test. The decision-making criterion is that if the significance value (Asymp. Sig. 2-tailed) is >0.05 , then the residual data are declared to be normally distributed. The obtained Asymp. Sig. (2-tailed) value is 0.831. Because this significance value is greater than $\alpha = 0.05$ ($0.831 > 0.05$), it can be concluded that the residual data in this regression model are normally distributed. Thus, the normality assumption has been met.

2. Results of the Linearity Test

The linearity test aims to determine whether the independent variable (X: E-Commerce Adoption) and the dependent variable (Y: Sales Volume) have a significant linear relationship. The test was conducted through the Test for Linearity at a 5% significance level. Decision criteria:

- The relationship is declared linear if the significance value for the Linearity combination is <0.05 .
- The relationship is declared linear if the significance value for Deviation from Linearity is >0.05 .

Table 9. Results of the Linearity Test (ANOVA Table)

Variable Relationship	Parameter	Sum of Squares	df	Mean Square	F	Sig.
Y * X	Linearity	312.45	1	312.45	142.35	0
	Deviation from Linearity	18.22	11	1.656	0.754	0.685

Based on Table 9, the results of the linearity test show that:

- The significance value in the Linearity row is 0.000 ($p < 0.05$), which proves that there is a significant linear relationship between the E-Commerce Adoption and Sales Volume variables.
- The significance value in the Deviation from Linearity row is 0.685 ($p > 0.05$), which means there is no significant deviation from the linear relationship.

With the normality and linearity assumptions met, the regression model is declared feasible and meets the requirements to proceed to the Simple Linear Regression Analysis and Hypothesis Testing stage.

E. Simple Linear Regression Analysis and Hypothesis Testing

Simple linear regression analysis is used to measure how much influence the E-Commerce Adoption variable (X) has on Sales Volume (Y) among MSMEs in Banjarmasin City.

1. Simple Linear Regression Equation

Based on the results of data processing using inferential statistics, the regression coefficients obtained are as listed in Table 10.

Table 10. Results of Simple Linear Regression Analysis

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	3.852	1.42	-	2.713	0.008
E-Commerce Adoption (X)	0.536	0.042	0.79	12.762	0.000

Dependent Variable: Sales Volume (Y)

Based on the table above, the resulting regression equation can be determined as follows:

$$Y = 3.852 + 0.536X$$

Interpretation of the Regression Equation:

- Constant Value (a) = 3.852: This indicates that if the E-Commerce Adoption variable (X) equals zero (no increase in adoption), then the Sales Volume variable (Y) for MSMEs in Banjarmasin City remains at 3.852 units.
- Regression Coefficient (b) = 0.536: The coefficient value is positive (+0.536). This means there is a positive relationship between E-Commerce Adoption and Sales Volume. Every 1-unit increase in the E-Commerce Adoption score is expected to increase Sales Volume by 0.536 units.

2. Hypothesis Testing (t-test)

The t-test (partial test) aims to determine whether E-Commerce Adoption has a significant effect on Sales Volume. The test was conducted at a significance level of $\alpha = 0.05$. The results of the t-test (partial) show that the E-Commerce Adoption variable has a positive and significant effect on MSMEs' Sales Volume in Banjarmasin City. This is evidenced by the calculated t-value of 12.762, which is greater than the t-table value (1.984), as well as a significance value of 0.000, which is far below 0.05, so H_0 is rejected and H_a is accepted.

3. Coefficient of Determination (R^2)

The coefficient of determination (R^2) is used to determine the percentage contribution of the E-Commerce Adoption variable in explaining the variation in the Sales Volume variable.

Table 11 Results of the Coefficient of Determination Test (R^2)

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	0.79	0.624	0.62		1.642

Predictors: (Constant), E-Commerce Adoption (X)

Based on Table 11, the R Square value is 0.624 (or 62.4%). This indicates that 62.4% of the variation in the increase in Sales Volume among MSMEs in Banjarmasin City is influenced by the E-Commerce Adoption variable. The remaining 37.6% (100% - 62.4%) is influenced by other factors outside this research model, such as product quality, pricing, offline promotion strategies, business location, and customer service.

DISCUSSION

Based on the series of data analyses that were conducted, the research findings prove that e-commerce adoption has a positive and significant effect on the sales volume of MSMEs in Banjarmasin City. The coefficient of determination (R^2) of 0.624 indicates that 62.4% of the variation in sales volume growth can be explained by the e-commerce adoption variable, while the remaining 37.6% is influenced by other external factors such as the effectiveness of offline promotions, product innovation, pricing, and the business's physical location.

Theoretically, these findings strengthen Davis's (1989) Technology Acceptance Model (TAM), in which perceived usefulness and perceived ease of use are the main drivers of technology acceptance among business owners. Among MSMEs in Banjarmasin City, the Perceived Usefulness (4.28) and Transaction Efficiency (4.26) indicators recorded the highest average scores. This proves that e-commerce platforms provide tangible benefits in reducing marketing costs, speeding up payment transaction flows, and simplifying digital supply chain management.

When compared with previous studies, these results support the findings of Pradana et al. (2020) and Rahayu and Day (2015), which confirm the crucial role of digital channel adoption in MSME revenue growth. However, there is an interesting difference in dynamics when compared with Nurlinda et al. (2021) in major metropolitan areas. While metropolitan research highlights the effectiveness of paid promotion (ads) as the main driver of sales, for MSMEs in Banjarmasin City the most dominant impact instead lies in the Consumer Reach Expansion indicator, which received the highest score (4.39). This confirms that the main strategic value of e-commerce for local businesses in the region is its ability to overcome the geographical limitations of river and island areas, allowing them to reach a national market beyond South Kalimantan.

The extent of this technological adoption effect is further rationally confirmed through analysis of respondents' demographic profiles. In terms of gender, the dominance of women entrepreneurs (58.0%) shows the flourishing of women's entrepreneurship based on home-based businesses. The flexibility of e-commerce platforms enables women entrepreneurs to run digital stores from home without having to bear the high cost of renting commercial space. In terms of business sector, the dominance of the Culinary (45.0%) and Fashion (30.0%)

industries—especially local products such as sasirangan fabric and regional processed foods—greatly benefits from visual marketing features and an integrated shipping ecosystem in e-commerce, which directly encourages impulsive buying and repeat orders.

Next, viewed from business scale, which is dominated by the Micro Enterprise group (73.0%), e-commerce functions as a low-cost market equalizer. Limited capital for physical expansion is offset by the efficiency of digital accessibility. Finally, the experience level aspect shows that 78.0% of respondents have adopted e-commerce for more than one year. This figure indicates that most business owners have passed the technical learning curve and entered the stage of advanced usage, such as managing promotional features, keyword research, and optimizing customer service.

Overall, the integration of statistical testing, theory confirmation, and demographic context shows that e-commerce adoption in Banjarmasin City is no longer merely an additional transaction tool, but a key strategy that can substantially boost competitiveness, expand market reach, and sustainably increase MSME sales volume.

CONCLUSIONS AND RECOMMENDATIONS

Based on the research results, it can be concluded that e-commerce adoption has a positive and significant effect on the sales volume of MSMEs in Banjarmasin City, with a contribution of 62.4%, while the remainder is influenced by other factors outside the model. This strong effect is largely driven by the perceived usefulness of digital platforms, which have proven effective in expanding market reach nationwide, breaking through geographic boundaries, and improving operational efficiency for microbusiness owners, especially women entrepreneurs in the culinary and fashion sectors.

To optimize these results, MSME owners are advised to make greater use of interactive promotional features such as live streaming and to speed up responses in digital customer service to overcome technical transaction issues. Meanwhile, local governments are expected to provide support through advanced digital marketing training (SEO and digital advertising) as well as more equitable internet infrastructure.

FURTHER STUDY

For further research, future researchers are advised to expand the research model by adding other unobserved variables—such as the effectiveness of digital advertising (e-commerce ads), pricing strategy, e-service quality, and fintech adoption—to explore the remaining 37.6% of influence. In addition, it is also recommended to expand the geographic scope to the inter-district/city level in South Kalimantan and to use mixed methods or longitudinal studies to observe the long-term impact of digital adoption on MSME business sustainability more comprehensively.

REFERENCES

- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- Ghozali, I. (2018). *Aplikasi Analisis Multivariate dengan Program IBM SPSS 25* (Edisi 9). Badan Penerbit Universitas Diponegoro.
- Kumala, I., & Khalidy, F. (2026). Pengaruh Adopsi E-Commerce terhadap Kinerja Penjualan Usaha Mikro, Kecil, dan Menengah (UMKM) di Indonesia. *Jurnal Manajemen Bisnis Digital Terkini*, 3(1), 343–348.
- Lubis, M. S. B., Astria, M., Arfah, Y., & Harahap, H. H. (2026). Pengaruh Adopsi E-commerce terhadap Ekspansi Pasar UMKM dengan Daya Saing sebagai Variabel Intervening. *ECo-Fin*, 8(2), 1166–1180.
- Miranda. (2025). Implementasi Technology Acceptance Model (TAM) Penggunaan E-Commerce pada UMKM di Kota Banjarmasin. Universitas Sari Mulia.
- Nurlinda, N., Batubara, M., & Triana, E. (2021). Pengaruh penggunaan e-commerce dan digital ads terhadap peningkatan volume penjualan UMKM. *Jurnal Riset Akuntansi dan Bisnis*, 21(1), 45–54.
- Pradana, M., Wardhana, A., & Rubiyanti, N. (2020). Digital transformation of Indonesian MSMEs: E-commerce adoption and its impact on sales performance. *Journal of Distribution Science*, 18(7), 35–44.
- Putra, A. P., & Syafrudin, R. (2025). Pendapatan UMKM Kota Banjarmasin Sebelum dan Sesudah Mengimplementasikan E-Commerce. *JIEP: Jurnal Ilmu Ekonomi dan Pembangunan*, 4(1), 156–170.
- Rahayu, R., & Day, J. (2015). Determinants of e-commerce adoption by SMEs in developing countries: Evidence from Indonesia. *Journal of Enterprise Information Management*, 28(1), 25–41. <https://doi.org/10.1108/JEIM-01-2014-0010>
- Sekaran, U., & Bougie, R. (2016). *Research Methods for Business: A Skill Building Approach* (7th ed.). John Wiley & Sons.
- Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D*. Alfabeta.
- Wulandari, D. S., & Prasetya, M. R. A. (2025). Transformasi Digital dan Strategi Ketahanan Pasca Pandemi pada UMKM di Kota Banjarmasin. *Economic and Education Journal (Ecoducation)*.