



The Effect of E-Commerce and Financial Technology on Increasing Micro, Small and Medium Enterprises' Income

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Abstract

This study aims to analyze the effect of E-Commerce and Financial Technology (Fintech) on increasing the income of Micro, Small and Medium Enterprises (MSMEs) in Padang City. The phenomenon of digitalization in the economic sector encourages MSME players to adopt digital technology as a strategy to improve operational efficiency and expand market access. This research uses a quantitative approach with a survey method involving 80 respondents of MSME players in Padang City who have used E-Commerce platforms and Fintech services. The data collection technique was carried out through distributing questionnaires and analyzed by multiple linear regression method using SPSS software. The results showed that both E-Commerce and Fintech have a positive and significant influence on increasing MSME income. E-Commerce contributes to expanding marketing reach and increasing sales volume, while Fintech facilitates access to financing and accelerates the financial transaction process. Simultaneously, these two variables are able to significantly explain the variation in MSME income increase. This finding confirms the importance of digital literacy and access to financial technology in strengthening MSME competitiveness in the digital economy era. Thus, it is recommended that MSME players continue to improve their adaptability to digital technology and that the government and related institutions provide assistance and training to maximize the potential of E-Commerce and Fintech as a driving force for local economic growth.

Keywords: e-commerce, financial technology, msme, revenue, digitalization.

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1. Introduction

In today's digital era, technological advances such as fintech and e-commerce have had a significant impact on the business world, especially for micro, small and medium enterprises (MSMEs). As the backbone of the Indonesian economy, MSMEs have a significant contribution to both the provision of labor services and domestic raw materials (GDP). According to 2023 data, around 66 million MSMEs contributed 61% of Indonesia's total GDP, which is IDR 1.5 trillion, while the overall GDP is IDR 9,580 trillion. In addition, MSMEs absorb 117 million workers, which is almost 97% of the entire national workforce. These figures illustrate the strategic role of MSMEs in directing economic growth and the emergence of jobs in the aviation industry [1].

Increasing MSME income is one of the main priorities in improving economic stability. Higher income allows MSMEs to increase business scale, improve product quality, and improve business stability and operations. Utilizing digital technology such as fintech and e-commerce is one way to increase income [2].

E-commerce provides opportunities for MSMEs to reach a wider audience, not only locally but also internationally. This digital platform allows MSMEs to reduce operational costs, such as physical inventory, so

that certain funds can be used for product development or marketing strategies. In addition, e-commerce helps MSMEs sell products through digital marketing strategies such as social media advertising and search engine optimization (SEO). These strategies not only increase product visibility but also help MSMEs become more competitive in the market [3].

However, despite its enormous potential, many MSMEs still have difficulty utilizing this technology effectively.

Table 1.1 Padang City MSME Data

Year	2021	2022	2023	2024
Number of MSMEs	38,299	41.787	43.282	47,692

Of the 47,692 MSMEs in Padang City, only 1,830 have previously used digital marketing. If we examine those who actively use fintech and e-commerce, this number may be slightly higher. This phenomenon highlights the significant interest in digital literature as well as issues related to trust in online transactions. In addition, understanding how to use digital technology is one of the key factors that hinders the ability of MSMEs to reach their maximum potential [4].

In addition, fintech offers significant financial solutions to increase MSME income. MSMEs can quickly and easily receive payments through digital payment services, which will help them with cash flow. In

addition, online banking provided by fintech offers ease and speed in accessing capital, which is more practical than traditional banking services. This data can be used for various purposes, such as extending the life of a product, purchasing raw materials, or launching new products. Thus, fintech not only helps MSMEs in financial transactions, but also provides important support in handling business modalities [5].

The increase in MSME income is also influenced by their ability to adapt to the market. Through data analysis available on e-commerce platforms, MSMEs can understand consumer needs, determine effective promotional strategies, and determine the time needed for new product delivery. These steps not only help increase sales but also foster customer loyalty, which ultimately contributes to business growth [6].

Therefore, the purpose of this study is to find out how the use of financial technology and e-commerce can help increase the income of MSMEs in Padang. In addition, this study will identify factors that can support or hinder the success of the technology. It is hoped that this analysis will provide useful recommendations for MSME actors so that they can maximize the benefits of digital innovation while improving their own welfare [7].

E-commerce or electronic commerce is a business mechanism that utilizes information and communication technology to conduct transactions for buying and selling goods and services via the internet. This definition includes various business models, including B2B (Business to Business) and B2C (Business to Consumer) [8].

Financial Technology, or FinTech for short, refers to innovations in the financial sector that integrate modern technology to improve financial services. FinTech encompasses a variety of applications and services that facilitate financial transactions, including payment systems, loans, and investment management. The term first emerged in the early 1990s and is now an important part of the global financial ecosystem. FinTech aims to transform conventional business models into more efficient, convenient, and transparent ones [9].

Revenue is the amount of money received by an individual or entity from various sources, including the sale of goods and services, rent, interest, and dividends. In the context of MSMEs, revenue usually comes from the sale of products or services offered [9].

Micro, Small and Medium Enterprises (MSMEs) are an integral part of the national economy, which plays an important role in creating jobs, increasing people's incomes, and driving economic growth.

Hypothesis Development

The Influence of E-Commerce on Increasing MSME Income in Padang City

E-commerce, defined as trading activities through electronic systems or digital technology, allows online transactions for buying and selling goods and services. Where the higher the use of e-commerce by MSMEs, the higher the income they earn. E-commerce not only expands market reach but also increases operational efficiency and product promotion. Therefore, the implementation of e-commerce is an important strategy for MSMEs to increase competitiveness and business sustainability in today's digital era.

Previous research produced findings regarding the positive influence of e-commerce on increasing MSME income [10], [11].

H1: E-Commerce has an impact on increasing the income of MSMEs in Padang City.

The Influence of Financial Technology on Increasing MSME Income in Padang City

Fintech is defined as the use of technology in the financial system that produces new products, services, and business models, and aims to improve efficiency and security in financial transactions. The use of fintech facilitates financial transactions, allowing MSMEs to make payments and manage finances more efficiently. This not only increases the ease of access to financial services, but also helps MSMEs optimize cash flow and capital management. Thus, the application of fintech can contribute directly to increasing MSME income, especially in the increasingly advanced digital era.

Previous research has produced findings regarding the positive influence of financial technology on increasing MSME income [12], [13].

H2: Financial Technology has a positive effect on increasing the income of MSMEs in Padang City.

2. Methods

Increasing the income of Micro, Small and Medium Enterprises (MSMEs) in Padang City. And evaluating the influence of financial technology (fintech) on increasing MSME income, and understanding how the use of fintech can increase the efficiency and accessibility of financial services for MSME actors.

This study uses quantitative methods focusing on numerical data and statistical analysis. This study aims to obtain objective results [14]. The data sources used in this study are primary and secondary data. Where the collection of primary data in this study by distributing questionnaires containing questions or statements to MSME actors in Padang City, the measurement of the questionnaire using a Likert scale through 5 (five) respondent answer criteria in the form of Strongly Agree (SS), Agree (S), Less Agree (KS), Disagree (TS), and Strongly Disagree (STS) [15]. While secondary data was obtained from the Cooperative and MSME Service of Padang City.

The population studied consisted of UMKM actors who had participated in the digital market, as many as 222 people who could be identified directly from the Padang City Cooperative and UMKM Service. This study will examine the influence of e-commerce and financial technology on increasing UMKM income in Padang City

The data analysis technique used in this study is multiple linear regression analysis using SPSS 25, to determine the influence between the independent variables: e-commerce and financial technology, and the dependent variable: increasing MSME income in Padang City with the following equation:

$$PPU = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

Where: PPU is the increase in MSME income, X1 is e-commerce, X2 is financial technology, e is the standard error, a is a constant, β_1 is the financial literacy regression coefficient, β_2 is the digital literacy regression coefficient. The use of techniques in testing and analyzing data uses Validity Test, Reliability Test, Classical Assumption Test and Hypothesis Test.

3. Results and Discussions

The results of multiple linear regression analysis obtained from SPSS version 25 are presented in the table below.

Table 2. Results of multiple linear regression tests

Coefficients ^a					
Model	Unstandardized Coefficients		Standardized Coefficients		Sig.
	B	Std. Error	Beta	t	
1 (Constant)	34,271	4,782		7.166	.000
TOTAL.X2	-.381	.148	-.293	-2,576	.012
TOTAL.X1	.280	.125	.254	2.238	.029

From Table 1. above, a multiple linear regression equation can be made, namely:

$$PPU = (-0.381) X_2 + e + 34.271 + 0.280 X_1$$

Then the equation can be interpreted as follows: The constant 34.271 shows that if the e-commerce and financial technology variables do not change, then the growth of MSME income in Padang City is estimated to reach 34.271 units. The regression coefficient for e-commerce is 0.280, which shows that everyone change in the e-commerce variable is expected to increase MSMEs by 28%, assuming other variables remain constant, the regression coefficient for Financial Technology is -0.381, which shows that everyone increase in this variable will result in a decrease in profit of 38.1% if we assume other variables do not change.

Validity Test

Validity testing is done by comparing the significance of each answer to all variables; a question is considered

valid if its significance is greater than the r table value. At the r table value, a value of 0.3081 is obtained from N-2, where N = 69. Thus, the degrees of freedom (df) at a significance level of 5% is 67 (69-2). The results of the validity test are presented in the table below:

Table 3. Validity Test Results

Variables	Item	R count	R table	Information
E-Commerce (X1)	X1.1	0.371	0.3081	Valid
	X1.2	0.497	0.3081	Valid
	X1.3	0.561	0.3081	Valid
	X1.4	0.335	0.3081	Valid
	X1.5	0.707	0.3081	Valid
	X1.6	0.642	0.3081	Valid
	X1.7	0.531	0.3081	Valid
	X1.8	0.597	0.3081	Valid
Financial Technology(X2)	X2.1	0.678	0.3081	Valid
	X2.2	0.817	0.3081	Valid
	X2.3	0.768	0.3081	Valid
	X2.4	0.765	0.3081	Valid
Increasing MSME Income (Y)	Y.1	0.316	0.3081	Valid
	Y.2	0.403	0.3081	Valid
	Y.3	0.584	0.3081	Valid
	Y.4	0.680	0.3081	Valid
	Y.5	0.442	0.3081	Valid
	Y.6	0.750	0.3081	Valid
	Y.7	0.496	0.3081	Valid
	Y.8	0.279	0.2369	Valid
	Y.9	0.380	0.3081	Valid
	Y.10	0.296	0.2369	Valid

Based on Table 2. above, the results of the validity calculation show that each variable indicator item has a calculated r value $>$ r table (0.3081), so it can be concluded that all indicator items in the variable are declared valid.

Reliability Test

Reliability test is a test used to evaluate the consistency or stability of measurement data. Reliability is measured by the Cronbach's alpha statistical test, where if the Cronbach's alpha value exceeds 50% then it can be said to be reliable. The results of the reliability test are presented in the table below.

Table 4. Reliability Test Results

Reliability Statistics			
	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
E-Commerce	.648	.652	8
Financial Technology	.751	.752	4
Increasing MSME Income in Padang City	.543	.628	10

Based on the results of the reliability test using Cronbach's alpha calculations on all variables, the

calculated Cronbach's alpha value is > 0.50 , so it can be concluded that all variables are declared reliable.

Classical Assumption Test

The classical assumption test is a series of tests used to meet assumptions so that the data estimation results provide accurate results and do not present biased results.

Multicollinearity Test

Multicollinearity test is a test used to detect multicollinearity problems. A regression model is said to be free from this test if the Tolerance value is >0.1 and $VIF < 10$ so that there are no symptoms of multicollinearity. The results of the multicollinearity test are presented in the table below.

Table 5. Multicollinearity Test Results

Model	Coefficients ^a		Collinearity Statistics	
			Tolerance	VIF
1	(Constant)			
	TOTAL.X2		1,000	1,000
	TOTAL.X1		1,000	1,000

Based on Table 4 above, it can be seen that the tolerance value for E-Commerce (X1) and Financial Technology (X2) is $1000 > 0.1$ and $VIF 1,000 < 10$, so it can be concluded that there is no multicollinearity in the E-Commerce and Financial Technology variables.

Heteroscedasticity Test

This test aims to test whether in the regression model there is inequality of residual variance from one observation to another. To detect heteroscedasticity in this study using the Glejser Method. If the significant value is >0.05 then there is no heteroscedasticity. The results of the heteroscedasticity test are presented in the table below.

Table 6. Heteroscedasticity Test Results

Model	Coefficients ^a				
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	Sig
1	(Constant)	2.254	2,491		.905
	TOTAL XI	-.029	.065	-.054	-.440
	TOTAL X.II	.062	.077	.098	.804

It can be seen that the level of significance for the e-commerce variable is 0.661, while the financial technology variable is 0.424 with both values greater than 0.05. From here it can be concluded that there is no heteroscedasticity in this regression model.

Hypothesis Testing

t-test

This test is used to assess the partial significance of each regression coefficient in a model, to determine the

influence of each independent variable significantly on the dependent variable in the regression analysis. If the t count value $< t$ table then there is no influence, if t count $> t$ table then there is an influence.

Based on the table above, the following results were obtained:

a. The results of the study show that the E-Commerce variable (X1) has a t-count that is greater than the t-table, which is $2.239 > 1.997$ with a significance level of $0.029 < 0.05$. This means that H_0 is rejected and H_1 is accepted, which means that the E-Commerce variable has a positive and significant effect on the growth of MSMEs in Padang City.

b. The results of the study indicate that the Financial Technology variable (X2) has a t-count that is greater than the t-table, which is $-2.576 < 1.997$ with a significance level of $0.012 < 0.05$. This means that H_0 is accepted and H_1 is rejected, which means that the Financial Technology variable has a negative effect on the growth of MSMEs in Padang City.

Test of Determination Coefficient (adjusted R square)

adjusted R square test is a method that provides a more appropriate and precise picture of how effective the independent variables are in influencing the dependent variable, considering the number and type of variables involved in the regression analysis. The results of the determination coefficient test are presented in the table below.

Table 7. Results of the Determination Coefficient Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.385 ^a	.148	.123	2,719

According to the table above, the calculated R-square is 0.123 or 12.3%. This shows that although e-commerce and fintech contribute about 12.3% to fintech, 87.7% of the time, both are influenced by other factors not explained in this study.

Discussion

The Influence of E-commerce on Increasing MSME Income in Padang City

The results of the analysis show that e-commerce has a positive and significant effect with a coefficient of determination of around 0.280. In other words, the higher the use of e-commerce, the higher the amount of money received by MSMEs. This can also be seen from the t-count and t-table of 2.238 and 1.997 respectively. This shows that the t-count is greater than the t-table with a significance level of 0.029 which means it is less than the threshold value of 0.05, so H_1 is accepted and H_0 is rejected. This supports the theory that digitalization through e-commerce can boost market value, reduce operational costs, and increase transaction efficiency. This condition is also in accordance with

previous studies (Yusuf, 2022) and (Nurmalasari, 2023) which show that e-commerce plays a role in increasing MSME income.

The Influence of Financial Technology towards Increasing MSME Income

Based on this study, financial technology has a negative effect on the growth of MSME income in Padang City with a coefficient of determination of -0.381. This shows that the more advanced financial technology is, the number of MSMEs obtained in Padang City will also increase. With a t-count value of -2.576 and a t-table value of 1.997, it can be concluded that if the t-count < t-table with a significance level of 0.012 is greater than the significance level of 0.05, then H1 is rejected and H0 is accepted. This can be caused by a lack of understanding or mastery of financial technology by MSMEs, as well as the purchasing power of most large business actors which is still high. These results are also supported by research (Agnesia & Saputra, 2022) and (Wahdia & Rintasari, 2023) which shows that less than optimal use of financial technology can be detrimental to MSMEs.

4. Conclusions (10 PT)

Based on the research results, it can be concluded that E-Commerce has a positive effect on increasing MSME income in Padang City, because it allows business actors to reach a wider market, increase marketing efficiency, and expand consumer access. Meanwhile, Financial Technology has a negative effect on MSME income, which is caused by the lack of understanding and sensitivity of business actors to the use of financial technology, thus inhibiting adaptation to changing market dynamics. Therefore, it is necessary to increase digital and financial literacy for MSMEs so that financial technology can be optimally utilized to support business growth and increase income.

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