



The Effect of Online Transactions and Capital on MSME Income in Jakarta

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Abstract. Micro, small, and medium enterprises (MSME) are efforts to increase employment opportunities, provide broad and equitable economic services to the community to encourage an increase in gross domestic product (GDP). E-Commerce is electronic commerce carried out by sellers and buyers without meeting each other. E-Commerce has socio economic impacts on business actors through a wider market reach. Capital is another factor in business continuity because it can describe the picture that business owner has in running a business. It was found that online transactions and capital had a partial effect on MSME income significantly. This research is a correlative study that aims to investigate the effect of online transactions and capital in MSME. So that MSME income has a large influence of 28% and the other 72% is other variables outside the research.

Keywords: MSME · income · online transaction · e-commerce · capital

1 Introduction

Micro, Small and Medium Enterprises (MSME, or UMKM in Indonesian) are business entities that have an important role and contribute significantly in the skills to produce goods or services. They are able to increase the workforce absorption and Gross Domestic Product (GDP). So this role is very important and strategic in the country's economy and its contribution to economic development and employment. Even though MSME are very influential in the regional to national economy, MSME do not always run smoothly because they might find several obstacles.

The Covid-19 pandemic has had an impact on the community's economy, including through a decrease in people's purchasing power. During the pandemic, physical interactions between people were also limited through restrictions on outdoor activities. MSME was not spared from this impact, the restriction of activities caused the reduction in transactions that occurred so there were several businesses that went bankrupt. There were also several developments as a form of adaptation to survive the pandemic, such as the use of electronic money in transactions to the development of contactless transactions facilitated by internet network. Through this development, MSME who were able to adapt could return to their business activities and avoid bankruptcy. New entrepreneurs have also emerged from this, who are taking advantage of digitalization in their transactions and business.

The challenges faced by MSME in general is limited access on several things, namely capital, technology, marketing, and markets [1]. Through the use of digital technology, marketing and market challenges can be overcome quite well by MSME. With the use of online media, the products offered can be distributed quite easily, thus the technology can be accessed by consumers. MSME here is able to overcome the two problems, so that all that remains is capital. Capital is the ability of a business to carry out activities that are absolutely needed by all businesses in carrying out business activities. The size of the capital can affect the development and business activities of business scales, including MSME [2].

Jakarta, which is the capital city of Indonesia, is one of the most densely populated areas. Population density and limited employment opportunities as well as the level of consumption of the people of Jakarta cause a large number of MSME located in the area. Because of this distribution, Jakarta was chosen as the research location.

1.1 Problem Statement

Some of the problems that were the subject of this research are:

1. Does online transactions affect income of MSME in Jakarta?
2. Does financial capital affect income of MSME in Jakarta?
3. Does online transactions and capital simultaneously affect income of MSME in Jakarta?

2 Theoretical Framework

2.1 MSME

Based on Law No. 20 of 2008 concerning MSME, it is mentioned that MSME (UMKM) is a productive business owned by an individual or a business entity that meets the category of micro, small, or medium-sized business. MSME is divided into three categories, namely micro-enterprises, small business, and medium business. The division is based on several factors, including capital and gross income, the criteria are as follows.

1. Micro Business

Micro business is a business with a capital below IDR 50M (excluding buildings and land), and with an income of less than IDR 300M per year.

2. Small Business

Small business is a business with a capital between IDR 50M and IDR 500M (excluding buildings and land), with an income between IDR 300M and IDR 2.500M per year.

3. Medium Business

Medium business is a business with a capital between IDR 500M and IDR 10.000M (excluding building and land), with an income between IDR 2.500M and IDR 50.000M per year.

Thus, those that meet the MSME category are businesses with capital below IDR 10.000M (excluding building and land capital); and with an income below IDR 50,000M per year.

According to (Sumarsono, 2003), several advantages of MSME include the potential for expanding employment opportunities, increasing the income of local residents, and increasing community skills [3].

2.2 Online Transactions

According Kotler & Armstrong (2014) *E-Commerce* is a channel that can be reachable via internet that is used for business activities for both business people and consumers [4]. There are three types of E-Commerce, including Business to Business for business partners to use, Business to Customer to facilitate transactions, and Customer to Customer which facilitates the provision of third party opinions for the products offered. This research focuses on the type of business to customer, namely the use of E-Commerce as a medium for online transactions.

2.3 Estimation Model

When running a business, capital is a crucial thing in realizing the factors that support the business both on the production side and on the sales and promotion side to customers. There are various sources of capital, such as personal capital, government assistance, financial institutions, including both banks and non-bank financial institutions.

Capital can be in the form of money, goods, or assets. All of these are crucial in starting a business. Capital is also one of the factors that categorize the size of the business as discussed earlier in the MSME sub section.

3 Methodology

The research is a correlative study, which looks for relationships between two phenomena or variables. The goal was to study the effect of online transactions and capital on the income of MSME in Jakarta. The data used were in the form of primary data, which was based on filling in web-based questionnaire distributed to a number of MSME actors in Jakarta. The survey conducted by Jakarta government showed that there were 289,370 MSME registered in Jakarta. Data obtained by this method are generally easier to analyze. The number of research samples was calculated as follows with a standard error of 10%.

$$n = N / \left(1 + Ne^2\right) = 289.970 / \left(1 + 289.970(0.1)^2\right) = 99,97 = 100 \quad (1)$$

Through the calculation, it was found that a minimum number of 100 samples was required. After the data was collected, the research instrument was tested. Followed by the classical assumption test to choose which model being most appropriate to use in research based on the collected data. And finally, hypothesis testing was carried out based on the model selected in the previous step. The hypotheses formed based on the formulation of the problem were as follows.

H₁ :Online transactions affect income MSME in Jakarta

H₂ :The model has an effect on income MSME in Jakarta

H₃ :Online transactions and capital simultaneously affect income MSME in Jakarta

3.1 Instrument Test

The research instrument test was conducted for questionnaire data to test the correct questionnaire items to be used and which were not appropriate to be used. Testing was done through validity and reliability tests. The reliability test was carried out by observing the value of *Cronbach's alpha*. When value *Cronbach's alpha* worth more than 0.7 then it can be interpreted that the variable was reliable enough to be used, if the value is less than 0.7 then it will be sought whether there are questions that interfere with the reliability of the variable and then eliminated. Validity test was carried out by comparing the calculated r value and r table, if the value of r count > r table, it means that the questionnaire items are valid enough to be used and adequately represent the measured variables. The value of r count > r table, it means that the questionnaire items were valid enough to be used and adequately represent the measured variables.

3.2 Classic Assumption Test

Classical assumption test was used to test which model will be used. Classical assumption tests include normality test, heteroscedasticity test because the data were in the form of *cross-section*, and multicollinearity test because there was more than one independent variable. Normality test was carried out using the Kolmogorov-Smirnov test because many samples used > 30, the data can be considered normal if the p value of the Kolmogorov-Smirnov test > 0.05. Furthermore, the heteroscedasticity test was carried out by observing the scatter diagram formed between the residuals and the predicted results of multiple linear regression modeling. Data that meets the heteroscedasticity test will form a scatter diagram that is evenly distributed and does not form a pattern. The multicollinearity test was carried out because collinearity or a very strong relationship between independent variables would produce biased and inaccurate modeling results. Multicollinearity test was carried out by observing the value of *Variance Inflation Factors* (VIF) and value *tolerance*. Data can be considered not experience multicollinearity if the value of *Variance Inflation Factors* minus of 10 and *tolerance* more than 0.1.

3.3 Hypothesis Test

Based on the previously stated hypothesis, multiple linear regression models can be used to test if the data meets all classical assumptions. There were two types of hypothesis testing to be carried out, namely the t test to test the partial effect and the F test to test the simultaneous effect. Hypotheses 1 and 2 are accepted if p *value* the t-test of each variable is less than 0.05. Hypothesis 3 is accepted if p-*value* F test is worth less than 0.05.

4 Results and Discussion

4.1 Research Instrument Test

The questionnaire can be considered reliable if it has Cronbach's Alpha > 0.7 , and can be considered valid if the r -count $>$ r -table (Table 1).

It was found that the three variables showed the value of *Cronbach's alpha* $> 0,7$ so it can be decided that the three variables can be considered reliable (Tables 2, 3 and 4).

Table 1. Reliability Test

Variable	Cronbach's Alpha	Description
X1	0,949	Reliable
X2	0,892	Reliable
Y	0,766	Reliable

Table 2. Variable Validity Test X1

Questionnaire	R-stat	R-table	Description
X1.1	0,814	0,197	Valid
X1.2	0,894	0,197	Valid
X1.3	0,864	0,197	Valid
X1.4	0,831	0,197	Valid
X1.5	0,897	0,197	Valid
X1.6	0,895	0,197	Valid
X1.7	0,913	0,197	Valid

Table 3. Variable Validity Test X2

Questionnaire	R-stat	R-table	Description
X2.1	0,737	0,197	Valid
X2.2	0,735	0,197	Valid
X2.3	0,800	0,197	Valid
X2.4	0,791	0,197	Valid
X2.5	0,788	0,197	Valid
X2.6	0,770	0,197	Valid
X2.7	0,854	0,197	Valid

Table 4. Variable Validity Test Y

Questionnaire	R-stat	R-table	Description
Y.1	0,569	0,197	Valid
Y.2	0,730	0,197	Valid
Y.3	0,506	0,197	Valid
Y.4	0,617	0,197	Valid
Y.5	0,521	0,197	Valid
Y.6	0,505	0,197	Valid
Y.7	0,682	0,197	Valid
Y.8	0,777	0,197	Valid

It was found that for all the questions on the three variables, the calculated r value was more than the r table value, so it can be concluded that all the questions on the X1, X2, and Y variables can be considered valid.

Based on the results of data processing, it was found that the three variables were reliable and all questionnaire items in each variable were quite valid so that there were no questionnaire items that needed to be omitted.

4.2 Classic Assumption Test

Classical assumption test was conducted to test whether the data is feasible to be processed using multiple linear regression models. The assumptions were in the form of residual normality assumptions, non-heteroscedasticity assumptions, and non-multicollinearity assumptions.

4.2.1 Call of Normality

Normality test was carried out using the Kolmogorov-Smirnov test with 100 degrees of freedom (Table 5).

Based on the classical assumption test, it was found that the residuals from the regression equation were normally distributed with the p value of the Kolmogorov-Smirnov test more than 0,05.

Table 5. Call Of Normality

	K-S Statistic	df	P-value
Unstandardized Residual	0,077	100	0,153

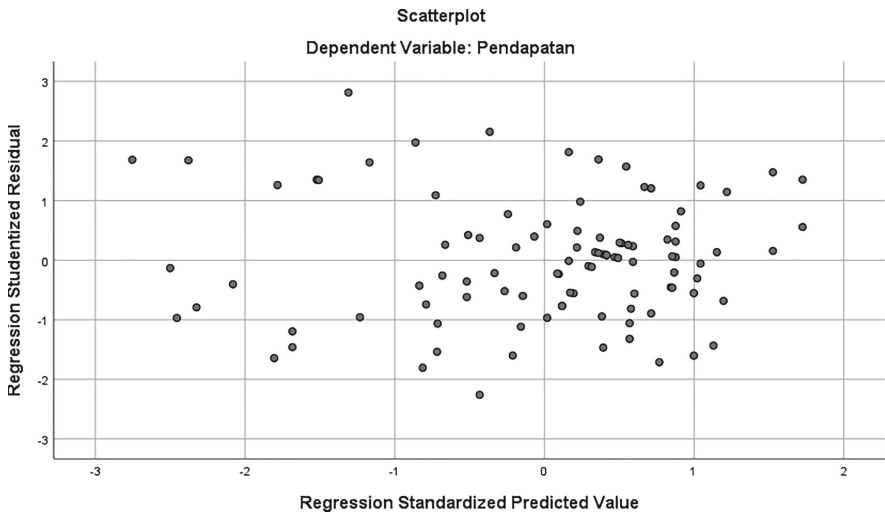


Fig. 1. Modeling and residual scatter diagrams

4.2.2 Heteroscedasticity

Heteroscedasticity test was carried out by observing the scatter diagram formed from the predicted value of the dependent variable from the modeling results and the residual value.

It was found that the scatter diagram is fairly evenly distributed and it can be concluded that the data passed the heteroscedasticity test (Fig. 1).

4.2.3 Multicollinearity Test

Multicollinearity test was carried out by observing the value of VIF and *Tolerance*, the data meet the non-multicollinearity assumption if the VIF value < 10 and *Tolerance* $< 0,1$ (Table 6)

The VIF value is 1.841 which is less than 10 and the tolerance is 0.543 which is more than 0.1 on the two independent variables so it can be concluded that there is no multicollinearity in the research model used.

With data that meets all classical assumptions, multiple linear regression models can be used to analyze the data.

Table 6. Multicollinearity test

	Tolerance	VIF
Online transaction	0,543	1,841
Capital	0,543	1,841

4.3 Hypothesis Model and Testing

Tables 7, 8 and 9 are the result of multiple linear regression modeling based on the data collected.

Based on the results of the regression, it was found that the correlation coefficient of the two independent variables on the dependent variable was 0.543 with a coefficient of determination of 0.295, which means that the two dependent variables had an effect of 29.5% on the dependent variable. Found the following regression equation.

$$Y = 19,710 + 0,189X_1 + 0,245X_2 + e \tag{2}$$

- Y : income of MSME
- X₁ : online transaction
- X₂ : capital
- e : residual (*error*)

Thus, it can be interpreted that for every 1 point increase in the online transaction variable with the controlled capital variable, the income value MSME will increase by 0.189 points, then for every 1 point increase in the capital variable with the controlled online transaction variable, then there will be an increase of 0.245 points in the income variable MSME, and if the two independent variables, namely online transactions and

Table 7. Correlation Coefficient and Determination

R	R-Square	Adjusted R-Square
0,543	0,295	0,280

Table 8. F-test

Model		SS	df	MS	F	p-value
1.	Regression	601,769	2	300,884	20,254	0,000
	Residual	1.440,981	97	14,855		
	Total	2.042,750	99			

Table 9. Regression Equation and T-test

Model		Unstandardized Coefficients		t-stat	p-value
		B	Std. Error		
1.	(Constant)	19,710	2,004	9,836	0,000
	Online transaction	0,189	0,069	2,744	0,007
	Capital	0,245	0,103	2,378	0,019

capital, are 0 then the income variable will be worth 19,710. Here are the results of hypothesis testing.

It was found that *p-value* the t-test on the online transaction variable is worth 0.007 (<0.05) which means that it is found that there is a significant effect of online transactions on income MSME. The coefficient is positive, which means that the effect of online transactions is positive, which means that an increase in online transactions will lead to an increase in income also MSME. This is in accordance with research conducted by Setyorini, Nurhayaty, and Rosmita (2019:501–509), who found that there was a positive effect of online transactions on operating profit [5]. The increase in the value of online transactions was again found to be able to increase the profit of a business, which means that online transactions over time and technology are a crucial part of business profitability.

It was found that *p value* the t-test on the capital variable is 0.019 (<0.05) which means that it is found that there is a significant effect of capital on income MSME. The coefficient is positive, which means that the effect of capital is positive, which means that an increase in capital will cause an increase in income of MSME. This is in accordance with research conducted by Purwanti (2012:13–28), which stated that business capital affects the income of a company MSME, so as to maximize the level of income, one of which is to increase the capital used by a business [2].

It was found that *p value* F test is 0.000 (< 0.05) which means that online transactions and capital simultaneously have a significant effect on income MSME. It is also found that the coefficient of determination is 0.280, which means that the two independent variables have an effect of 28% on the dependent variable, namely income MSME. While the other 72% are other variables not examined in this study such as promotion and product quality.

5 Discussion

1. The Effect of Online Transactions on MSME Income in Jakarta

The results show that online transactions have an effect on the income of MSME in Jakarta. The existence of rapid technological developments makes all activities effective and efficient, one of which is in terms of business transactions. Every MSME in Jakarta must be able to implement online transactions in its payment system to make it easier for buyers during the COVID-19 pandemic. Buyers do not need to meet directly with the seller, but only through online network, starting from the selection of goods to the delivery process. The results of this study are in line with research by Setyorini et al. (2019) that stated online transactions have a positive effect and significant to increases in MSME [5]. Nursafitri (2022) also mentioned that the transaction *online (e-commerce)* has a positive and significant effect on increasing the income of MSME. The higher the use of online transactions in selling, the higher the income obtained by MSME.

Online transactions can expand the market and the hope is to increase sales profits for MSME. In addition, online transactions can also save on marketing and labor costs so that it will increase sales [6]. During the COVID-19 pandemic, community and social activities were limited by the government and some people were afraid to leave their

homes but people would also buy the goods they needed to survive. Online transactions have a big role as a buying and selling solution during the COVID-19 pandemic. This is also supported by Rianty & Rahayu (2021), the use *e-commerce (online transaction)* during the COVID-19 pandemic can increase the income of MSME [7]. Promoting and selling products by utilizing the internet makes it easier to introduce products to potential buyers to offer their products.

This activity also helps MSME in Jakarta in selling their products to the global market. Business efficiency can be achieved because there are no time and space restrictions in selling [7]. Gustina et al. (2022) stated that e-commerce has a significant effect on MSME income [8]. This is also supported by Alzoubi et al. (2022), which stated that e-commerce has a significant impact on sales growth [9]. This statement can reflect that MSME that were able to take advantage of online transactions during the COVID-19 pandemic would be able to increase sales so that their income and profits would also increase. The development of online stores and online transaction methods will lead to increased sales [9]. The COVID-19 pandemic does not completely prevent MSME from selling, but can help increase sales for MSME who can take advantage of opportunities in their business.

2. The Effect of Capital on The Income of MSME in Jakarta

The results showed that capital had an effect on the income of MSME in Jakarta. Capital as a very important element for MSME in establishing a business, business continuity, and to increase income. Capital and income have a close relationship because of the size of the capital and income can have an impact on the income earned by MSME in Jakarta. The results of this study are in line with Polandos et al. (2019) that business capital has a positive and significant effect on MSME income [10]. The greater the capital used by entrepreneurs, the higher the income obtained by MSME in Jakarta.

If entrepreneurs reduce their business capital, income will also decrease because the products that can be created are less. This statement is also supported by Laili & Setiawan (2020), which stated that large capital will support the business because it can increase the variety and amount of product inventory produced [11]. The large variety and number of products can increase the income obtained by MSME and high consumer buying interest. MSME in Jakarta during the COVID-19 pandemic must be able to create new variations on their products in order to attract potential consumers to buy so that income will increase. Of course, this must also be accompanied by the use of large capital in order to be able to innovate.

Hasanah et al. (2020) stated that the increase in the income of MSME was much influenced by the capital owned [12]. Capital also needs to be calculated properly so that the goals and profit targets expected by MSME can be achieved. The company considers the optimal use of capital because it can affect profitability [13]. MSME actors in Jakarta must use business capital as well as possible to ensure the continuity of their business. Small business capital can hinder business development because it will produce fewer products so that the income earned by MSME is also small.

Large business capital can be used to purchase equipment and supplies needed to support the production process [14]. A smooth production process will increase business growth more advanced. This statement is also supported by Ha et al. (2022), which stated

that venture capital has a positive impact on business growth [15]. To get land, technology, and labor, capital is needed first. During the COVID-19 pandemic, capital can also be used for the promotion or marketing needs of MSME in Jakarta on print and electronic media platforms.

3. The Effect of Online Transactions and Capital on MSME income in Jakarta

The results show that online transactions and capital simultaneously affect the income of MSME in Jakarta. The income earned by MSME is closely related to the use of online transactions and the capital they have. Online transactions will make it easier for prospective consumers to shop so that consumer interest in buying products becomes high and in the end, the income of MSME in Jakarta becomes higher. Operational costs that can be reduced by online transactions so that business expenses are reduced. The use of large capital can support factors of production and can affect income because the capital is used to improve product quality. Sufficient capital must be used optimally so that the target can be achieved.

The results of this study are supported by Urohmah (2022), which stated that online transactions and business capital have a positive influence on MSME income [16]. In addition to getting an increase in income, online transactions can also make it easier for MSME in Jakarta to market their business to various local and international areas. This statement is supported by Rosita (2020), that MSME that can survive the COVID-19 pandemic are ones that take advantage of digital transformation with an online business model [17]. Prospective consumers prefer to shop online because it can minimize costs, power and time efficiency, reduce fatigue, competitive prices, limit shopping, and others.

In addition, capital plays a role in business continuity because it can finance all business needs to continue to grow. MSME have limited internal funds, so they may also need funds from external parties. Large capital can increase production capacity and make it easier for MSME in Jakarta to innovate their products. Product innovation must take into account the conditions and trends that are happening in society. During the COVID-19 pandemic, the MSME that were able to survive were MSME that adapted their business with innovative products [17].

6 Conclusion

Based on the research that has been done, capital and online transaction affect MSME income simultaneously. The addition of these two will add tools or merchandise to be sold so that income increases. Strategic business locations also affect buyers simultaneously in Jakarta.

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