

MSME lending and its impact on the unemployment rate: Evidence from Indonesia



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ABSTRACT

Micro, small, and medium enterprises (MSMEs) are business sectors that contribute positively to economic development and their contribution to national income. However, as the number of MSMEs increases but MSME faces several problems. The most prominent issue is the lack of capital owned by the entrepreneurs to develop their businesses. In lending, there are several things that need to be considered by creditors and debtors to maintain the intermediary function of the bank. By providing targeted credit, more workers can be absorbed so that Indonesia's unemployment rate continues to fall. This study using panel data regression. First model using the random effect model (REM) method and second model using the fixed effect model (FEM) method with a cross-section of 33 provinces in Indonesia and time series 2015-2022. The test results show that the DPK variable, the number of branches, and inflation have a positive and significant effect on total MSME lending and the NPL variable has no effect on total MSME credit. Furthermore, the total MSME lending variable and the economic growth rate have a negative significant effect on the unemployment rate. This research provides a deeper understanding of the factors that determine MSME lending and how they relate to the unemployment rate in 33 Indonesian provinces. It can also be used as a basis for formulating more effective policies related to MSME lending with the potential to reduce the unemployment rate.

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1. Introduction

Putting job creation at the center of economic policy-making and development planning will create decent work opportunities and lead to more robust, more inclusive growth and reduced poverty (Bappenas, 2023). Indonesia is one of the developing countries with the fourth largest population after China, India, and the United States, with a population of 276.4 million (Kusnandar, 2022). The large number of people causes limited sources of production, on the other hand, the government's limited capacity to reach a large population makes it only able to accommodate part of the workforce in the world of work. In the second quarter of 2022, the quality of Indonesia's economic growth continues to improve, as evidenced by the decline in poverty and unemployment rates and the improvement of social conditions (Limanseto, 2022). Stable economic performance was also reflected in improved labor market performance. The open unemployment rate declined from 5.83% to 5.45% in February 2023. Strong economic growth created an additional 3.02 million jobs (Prastowo, 2023). Indonesia will have the highest number of unemployed in Southeast Asia in 2022, followed by Malaysia, Vietnam, Singapore, and Thailand (Roiyhan, 2023).

The expansion of employment is the most important strategy that the government must pay attention to reduce the number of unemployed. Micro, small, and medium enterprises, hereinafter referred to as MSMEs, are business sectors in the economy that have made many positive contributions to economic development, especially in Indonesia. MSMEs have three important roles in the economy, including; a). the large number of MSMEs covering all economic sectors, b). MSMEs absorb a large number of workers, and c). the contribution of MSMEs to national income is quite enormous. Along with the increasing number of MSMEs and their positive contribution to the economy. MSMEs face several problems, including capital availability, marketing, innovation for business development, and human resource development. The most prominent issue is the lack of capital owned by business actors (Catriona, 2022). The government and related institutions are trying to overcome this problem by providing capital support, one of which is by providing credit from formal sources such as banks.

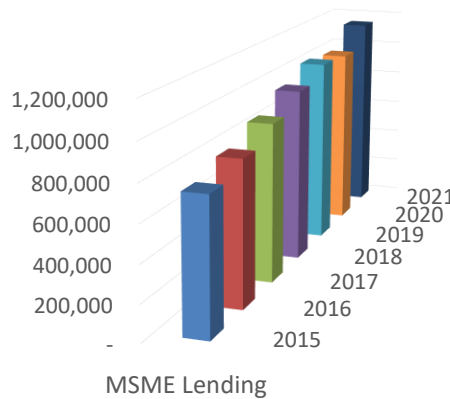


Figure 1. Graph of Total Lending to Micro, Small and Medium Enterprises in Indonesia 2015-2021

Figure 1 shows the total MSME credit increased from 2015 to 2021, which proves that banks as economic agents have responded well to MSMEs in terms of lending as a source of capital for business owners. However, in 2020, the total bank credit decreased due to the Covid-19 pandemic and the same thing happened to MSME credit, based on data from the Financial Services Authority (OJK) in 2019, the total bank credit was IDR 5.616 trillion with MSME credit of IDR 1.044 trillion, then there was a decrease in 2020. Banks and MSME players continue to recover, so in 2021 the total bank credit and MSME credit will increase again, accompanied by recovery in various other sectors. In lending, many supporting factors need to be considered by debtors and creditors. Banks in lending must pay attention to the funds raised by banks from other parties referred to as third-party funds (DPK). Banking financial performance factors such as non-performing loans (NPL) must also be considered. Bank branches are opened in each region to accelerate banking operations service. The aim is to provide banking services to the community, especially economically vulnerable communities. External constraints also affect lending. Inflation is one of the determinants of consumption patterns, where inflation affects producers, communities, and banks.

This study is in line with the study conducted by Ncanywa & Getye (2016) the findings revealed a significant negative relationship between microcredit financing and unemployment. This means that microcredit financing can be recommended as a tool to reduce unemployment, and it may have a positive impact on job creation in South Africa. In the research conducted Anis et al (2020) it is well known that internal factors have a more significant impact on the total amount of SME loans disbursed than external considerations. According to the findings of the study, NPL significantly increases total MSME credit while CAR significantly decreases it. Inflation, LDR, BI rate, and ROA do not affect total MSME loans. Previous research related to the variables used in this study can be seen in the research of Manihuruk et al (2022); Purboadji et al (2022); Puspitasari & Musaroh (2018) and Hidayat (2018) which each of the variables the research affects credit. The challenges of small business is higher to get credit from bank, Adams et al (2023) that small number of banks specialize in originating very small loans nationwide quadrupling their share of lending but small business remain get lending from local banks. Another study from Jeong (2023) provides that increase in small business administration loans had a positive effect on employment in lower-income countries and Orzechowski (2023) not only on employment but in economic development.

The literature on the determinants of MSME lending and its impact on unemployment at the provincial level in Indonesia is limited. While several studies have touched on certain aspects, the lack of thorough research on the interaction between these factors at the provincial level creates a knowledge gap that requires a deeper understanding. Therefore, this study aims to fill this gap by comprehensively investigating the factors of MSME lending and its impact on unemployment in 33 Indonesian provinces. This study contributes significantly to the existing literature by taking a holistic view of the determinants of lending to Micro, Small, and Medium Enterprises (MSMEs) and its impact on the unemployment rate in 33 Indonesian provinces. Study from [Orzechowski \(2023\)](#) provides positive relationship between growth in small business administrations lending and civilian employment levels and small business administration lending programs can best help foster economic development and employment. In a context where the literature is limited to certain aspects, this study explores the complex interactions between these factors at the provincial level, filling a knowledge gap that needs to be adequately addressed. By unraveling the deeper relationship between credit and unemployment at the provincial level, this research enriches academic understanding and provides practical guidance for policymakers in designing more effective strategies to support economic growth and reduce unemployment at the national level.

The advantages of the study are to analyze the drivers of micro, small, and medium enterprise (MSME) lending and its impact on the unemployment rate. [Contreras et al \(2023\)](#) provide that decline small business loans led to reduces net new small business formation and their job creation capacity and led to income inequality. Through a more specialized understanding of the economic dynamics in Indonesia based on region capacity, this research provides insights that local governments and stakeholders can use to design more appropriate and targeted policies. [Lee \(2018\)](#) states with the OLS regression there are positive relationship between small business loans and regional growth. Another study from [Jalunggono et al \(2023\)](#) that there is positive relationship between MSME credit distribution and economic growth but there is no causality effect between those variables. In addition, this research can provide a more in-depth view of the opportunities and challenges facing MSMEs in Indonesia, allowing businesses and financial institutions to adapt their strategies to support the growth of the MSME sector in the region more effectively. As such, the contribution of this research is not only academic but can also have a direct positive impact on local economic development and increased employment.

2. Method

This research was conducted in Indonesia with 33 provinces. This research was conducted in a time series from 2015 to 2022. This study uses secondary data from the Financial Services Authority (OJK), Central Statistics Agency (BPS), and Bank Indonesia (BI). The variables used in this study are as follows: a). total MSME loans; b). open unemployment rate; c). third-party funds (DPK); d). non-performing loans (NPL); e). number of bank branches; f). inflation; and g). economic growth. The data analysis in this study uses the panel data regression method. The choice of panel data analysis method in this study was carefully considered to overcome the specific challenges of the data set. This decision was driven by the method's superiority in dealing with the time dimension and variation between observation units. The panel data analysis method was chosen because of its ability to overcome heteroscedasticity and autocorrelation problems, provide more efficient estimation, and allow the measurement of time-varying effects. In addition, this method takes into account variation between individuals and between locations, thus supporting the identification of individual differences and changes over time.

Using panel data methods is provide more accurate parameter estimates, reduce selection bias, and model fixed and random effects. Overall, the selection of the panel data analysis method in this study aims to obtain a more in-depth and relevant understanding of the determinants of MSME lending and its impact on the unemployment rate in 33 Indonesian provinces. This study has 2 models, first model is to analyze what the determine of the MSME lending and the second model to analyze the relationship of the MSME lending and economic growth to unemployment rate. The equation for the first model based on [Yudaruddin \(2020\)](#) as follows:

$$MSMEloans_{it} = \alpha_0 + \beta_1 DPK_{it} + \beta_2 NPL_{it} + \beta_3 NB_{it} + \beta_4 INF_{it} + \varepsilon_{it} \quad (1)$$

The first model is to analyze what the determine of the MSME loans. In this study, does the internal factors has the impact to MSME loans in Indonesia. For the internal factors, DPK as the third party-funds; NPL is the non-performing loan; NB is the number of banks and INF is the inflation for the control variables. MSME loans is the total credit distribute to the MSME across 33 provinces in Indonesia. Second model to analyze how the relationship of MSME loans and economic growth to unemployment rate. The equation of the second model based on [Jalunggono et al \(2023\)](#) as follows:

$$UNEM_{it} = \alpha_0 + \beta_1 MSMEloans_{it} + \beta_2 Growth_{it} + \varepsilon_{it} \quad (2)$$

Where UNEM is the unemployment rate; Growth is the economic growth; for the first and second model has the notation α_0 is the constant; $\beta_1 - \beta_4$ is the coefficient of the independent variables; ε is the error term, i for the cross-section and t for time series. Panel data consist of the Common Effect Model (CEM), Fixed Effect Model (FEM), and Random Effect Model (REM) approaches. The best model selection among the above three models is selected using a panel data specification test consisting of the Chow test, Hausman test, and Lagrange multiplier test. Chow test is a test to choose the best model between CEM and FEM. Hausman test is a test to select the best model between FEM and REM. Furthermore, the Lagrange Multiplier Test is used to select the best model between CEM and REM.

3. Results and Discussion

The average total MSME credit increases in 33 provinces in Indonesia in 2015-2019, and decreases in 2020 due to the Covid-19 pandemic, so banks need to be careful in lending to the public. The highest total credit to the MSME sector is in East Java Province with an average credit from 2015-2022 of Rp 142.53 trillion, in the last 3 years East Java has become the province with the highest credit nationwide. This is a concrete evidence of the seriousness of the provincial government's efforts and attention so that MSMEs in East Java not only survive in the mid of a pandemic, but also improve. [Contreras et al \(2023\)](#) states that decline small business loans led to reduces net new small business formation and their job creation capacity. MSME loans faces the challenges for the last 5 years, increase the uncertainty and transition from the pandemic but MSME loans still play important role to reduce unemployment rate ([Orzechowski, 2023](#)). This study to analyze the impact of internal factors such as DPK, NPL, the number of bank, and inflation as the control variable on the total credit of MSMEs.

Table 1. Diagnostic Tools for Panel Data

Chow Test	Hausman Test	LM Test
244.083	3.234	261.894
(32)	(4)	(20.282)
[0.0000]	[0.5195]	[0.0000]

Source: data processed

Table 1 shows the cross-sectional chi-square value (0.00) < 0.05 means that based on Chow test results, the selected model is the fixed effect model and for the Hausman test results, the cross-sectional Chi-square value (0.51) > 0.05 means that based on Hausman test results, the selected model is the Random Effect Model and the Lagrange Multiplier test results show that the Breusch-Pagan probability value is 0.0000 < 0.05. This means the selected model is the Random Effect Model (REM). The results of the first model selection show that the Random Effect Model (REM) is the best model among the three models.

Table 2 shows the probability value of F-statistic is $0.00 \leq 0.05$, which means that the independent variables in the form of DPK, NPL, NP, and INF have a significant effect on the dependent variable. Based on the estimation results obtained in this study, the coefficient of determination is 0.650065. It can be concluded that the DPK, NPL, NB, and INF variables can explain 65% of the total MSME credit in Indonesia. In comparison, 35% is influenced by other variables outside the study. The DPK variable has a coefficient of 0.574 with a probability value of $0.00 \leq 0.05$. This means that the DPK variable positively and significantly impacts total MSME loans. This shows that the increasing amount of third-party funds collected by banks affects the total MSME loans disbursed by banks. The amount of third-party funds is a form of public confidence in banks to store their funds in the form of savings, current accounts, deposits, or other equivalent forms. The amount of third-party funds held by a bank will affect the loanable funds held by the bank. The availability of loanable funds will affect the loans

made by banks to MSME players (Puspitasari & Musaroh, 2018). This research is consistent with the research conducted by Manihuruk et al (2022) which shows that DPK has a positive and significant effect on MSME financing. The same research was also conducted by Artini et al (2021) with the result that DPK has a significant positive effect on MSME financing. The increasing number of third-party funds entering a bank in different regions proves that the bank is performing its intermediation function well, where banks collect funds from people who have excess funds and then channel these funds to people who need or lack them, and one of them is in the form of lending to MSMEs.

Table 2. Result of Random Effect Model for First Model

Variables	Coefficient
C	10.342 (6.210)***
DPK	0.574 (8.992)***
NPL	0.004 (0.246)
NB	0.438 (4.186)***
INF	0.023 (2.292)**
Diagnostic Tools	
R-Squared	0.650
F-Stat	120.284***

Source: data processed

The NPL variable has a coefficient value of 0.003 with a probability value of $0.80 \geq 0.05$. This means that the NPL variable has a positive and insignificant effect on total MSME loans. The results showed that the increase in the NPL ratio did not affect the amount of total MSME loans. One of the risks banks face in their lending activities is the risk of non-payment of loans extended to debtors. Credit risk is a form of failure or inability of the customer to repay the loan received from the bank along with interest within the stipulated period (Ramandhana et al., 2018). There are several possible reasons why NPLs are positively associated with MSME loans. Given the importance of MSMEs in the economy, many banks have special programs to support this sector. Despite the risk of NPLs, banks may consider supporting MSMEs as a profitable investment in the long run, especially for improving access to financial services and local economic development. This study is consistent with the findings from Widiyanti et al (2014) and Puspitasari & Musaroh (2018) NPL variable has insignificant effect on the lending of MSME. This is because the high value of capital adequacy owned by the bank can cover the credit risk caused by inadequate or non-performing loans, so a high enough NPL value does not directly lead to a decrease in lending.

The number of bank has a coefficient value of 0.438 with a probability value of $0.00 \leq 0.05$. This means that the variable number of bank has a significant and positive effect the total amount of MSME loans. The increase in the number of bank affects the amount of total MSME loans. The number of bank often indicates a bank's network and coverage. The more branches a bank has, the more contact it has with its individual or corporate customers and the more diverse its products, including credit products. Having branches in different locations increases public confidence in the bank (Putribasutami & Paraminta, 2018). People feel more comfortable borrowing money and using other services when banks are physically present in their neighborhoods. Thus, a high level of trust favors credit growth. This research is consistent with the research findings Mandak et al (2023) that the number of bank branches has a significant positive effect on MSME credit in North Sulawesi Province. This is in line with the results of research conducted Manihuruk et al (2022) which shows that the number of bank branch offices also has a positive and significant effect on the amount of MSME lending.

Inflation (INF) variables has a coefficient value of 0.023 with a probability value of $0.02 \leq 0.05$. This means that the inflation variable has a positive affects on total MSME loans. The increase in the inflation rate affects the increase in total MSME loans disbursed by banks. Inflation is defined as an increase in the price of goods and services over time, decreasing the purchasing power of money. When inflation occurs, the cost of raw materials, rent for premises, wages, and other operating expenses of SMEs tend to increase. In response, MSMEs require additional financing to maintain their

operations and production. This increases the need for credit as a means of financing. From the perspective of MSMEs, persistent inflation can increase the likelihood of borrowing. For example, MSMEs that borrow now to expand their business or purchase goods hope that future income (which is likely to increase as inflation raises the selling price of their products) will make repayment easier. his research is consistent with the findings of research conducted by [Pinto et al \(2020\)](#) which provides empirical evidence that inflation has a positive and significant effect on lending. Similar research was also conducted [Putra \(2018\)](#) which found that inflation has a significant positive effect on the total lending of commercial banks in Indonesia.

For the second model, the Chow test results, the cross-sectional chi-square value <0.05 means that from the Chow test results, the selected model is the fixed effect model and continued the Hausman test. From the Hausman test results, the cross-sectional chi-square value <0.05 means that the chosen model is the fixed effect model from the Hausman test results. The selection of FEM as the best model in the second model regression must be tested for classical assumptions by performing a multicollinearity test and a heteroscedasticity test. The results of the multicollinearity test in this study are that there is no correlation between the independent variables because the coefficient value is not greater than 0.80. Furthermore, there is no heteroscedasticity problem because the probability value is greater than 0.05.

Table 3. Result of Fixed Effect Model for Second Model

Variables	Coefficient
C	29.937 (3.110)**
MSMEloans	-0.799 (-2.525)**
Growth	-0.085 (-5.615)***
Diagnostic Tools	
R-Squared	0.830
F-Stat	32.912***

Source: data processed

Table 3 shows probability value of the F-statistic is $0.00 \leq 0.05$, which means that the independent variables in the form of total MSME credit and economic growth rate significantly affect the dependent variable, namely the unemployment rate. Based on the estimation results obtained in this study, the coefficient of determination is 0.830119. It can be concluded that the unemployment rate in Indonesia can be explained by the total MSME credit and economic growth rate of 83.01%. The total MSME credit variable has a coefficient of -0.799 with a probability value of $0.01 \leq 0.05$. This means that the MSME credit variable negatively and significantly impacts the unemployment rate. The result of this study shows that the increase in total credit disbursed to MSMEs affects the unemployment rate in Indonesia. MSMEs are recognized as a sector that can play a strategic role in the national economy, especially in job creation. MSMEs often face liquidity problems and difficulties in obtaining capital from institutions. In such cases, MSME credit acts as a bridge between the financing needs of MSMEs and available sources of finance. MSME loans growth can increase local economic productivity. As a result, the circulation of money in the community can be facilitated, contributing to economic growth and job creation in other sectors ([Contreras et al., 2023](#)). Access to credit for MSMEs plays an essential role in reducing unemployment. Adequate access to credit for MSMEs supports MSME growth and directly contributes to job creation and overall economic growth ([Orzechowski, 2023](#)). This research is consistent with the research conducted by [Juniarto & Muchlisoh \(2021\)](#) the results showed that MSME credit has a negative and significant impact on the unemployment rate. This indicates that the provision of MSME credit positively impacts employment. Since credit allows MSMEs to maintain and even expand their businesses, the larger the size of the MSME, the more employment opportunities are available to them. Increased employment opportunities also help to increase the number of jobs and reduce unemployment. This is also consistent with the research conducted [Jalunggono et al \(2023\)](#) which shows that providing MSME loans by state-owned banks can reduce the unemployment rate in Indonesia.

The economic growth has a coefficient value of -0.085 with a probability value of $0.00 \geq 0.05$. This means that the economic growth variable significantly negatively affects the unemployment rate. Increasing economic growth affects the unemployment rate in Indonesia. This is consistent with

Okun's law theory, which states a negative relationship between economic growth and unemployment. In general, economic growth is associated with increased labor productivity, industrial expansion, and the development of other economic sectors (Safitri et al., 2023). In addition, economic growth also encourages increased investment in various sectors, including the MSME sector. Economic growth and credit availability to MSMEs play an essential role in determining the unemployment rate in a region. Increased economic growth supported by adequate credit to MSMEs can be one of the strategic solutions to reduce unemployment. Therefore, policies to support economic growth and credit availability for MSMEs need to be continuously improved and expanded to reduce unemployment (Cahyo, 2016).

4. Conclusion

Debate still growing on effect of MSME loans to unemployment, but the expansion of small business can make create more job and lack of expansion from MSME led to reduce their job creation capacity and led to income inequality. In the last 5 years, all banks faces challenges in the middle of raises uncertainty and transition after pandemic. Based on the result, internal variables such as DPK, NB, and inflation have a significant positive effect on total MSME credit. At the same time, the NPL does not affect total MSME credit. Furthermore, the variables of MSME credit and economic growth rate have a significant negative effect on the unemployment rate.

MSMEs face significant barriers in securing finance. The government and financial institutions must consider a more comprehensive and flexible approach. Examples include simplifying the loan application process, reducing collateral requirements, and providing particular incentives for MSMEs located in remote areas. Improved access to credit can significantly accelerate MSME growth and help reduce unemployment. MSME owners must have the knowledge and skills to use the funds wisely. MSME development is not only the government's responsibility. The private sector also has a vital role to play. It can work with the government, for example, by setting up business incubators and innovation centers.

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