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Income Analysis of Micro and Small Enterprises (MSEs) During the Covid-19 Pandemic: Evidence from Indonesia

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**Keywords:** Micro and Small Enterprises, working hours, total workforce, income level, information technology, government capital assistance, income.

## **ABSTRACT**

Micro and Small Enterprises (MSEs) are one of the economic sectors that have been severely affected by the Covid-19 pandemic. MSE actors experienced decreased income due to declined sales and marketing limitations caused by restrictions on working hours imposed by the government and reduction in workforce done by business owners to reduce spending and incompatible information technology capabilities for MSE buying and selling transactions. This study aims to analyze the capability of MSEs to earn income during the Covid-19 pandemic. To be more specific, this study focused on several factors that influence income, namely working hours, total workforce, education level, information technology, and government capital assistance. By employing multiple linear regression, the study results indicated that capital assistance from the government could explain the income gain of MSE actors. Meanwhile, the other four variables did not have any impact on MSE income.



#### INTRODUCTION

The Covid-19 pandemic has significantly impacted the sustainability of Micro and Small Enterprises (MSEs) in numerous developing countries globally, including Indonesia (Ilmiyah, 2020; Hui et al., 2020; Rosita, 2020). Khaeruddin, Nawawi, and Devi (2020) explicated that MSEs experienced decreased income due to declined sales and marketing limitations caused by restrictions on working hours imposed by the government, reduction in workforce, and limited information technology capabilities. Therefore, the Covid-19 pandemic is an impediment to increasing income from developing businesses.

Based on the survey results from the Indonesian Statistics, 59.8% of MSEs were still operating normally. Meanwhile, 24% reduced capacity, 10.1% stopped functioning, and 5.4% worked from home. Previous research has revealed that the decrease in income during the pandemic was caused by declining sales and marketing limitations (Rosita, 2020).

This phenomenon is reinforced by research from (Aji and Lestyaningrum, 2021; Prayitno and Yustie, 2020), which stated that technological and working hour limitations had worsened MSEs. Based on these studies, the researchers believe that MSEs can still earn significant income if they can manage working hours, the total workforce, the knowledge gained from education, and skills in using information technology. In addition, government social assistance plays a crucial role in overcoming economic problems among MSEs in Indonesia (Rochmatullah and Probohudono, 2014). Based on this phenomenon, this study deepens the analysis of the phenomenon referring to these factors.

Law of the Republic of Indonesia 20/2008 stipulated that MSEs contribute to increasing national income, employment, increasing income for people with low incomes, and exploring the ability to use local raw materials to produce goods and services for the wider community. Meanwhile, the Ministry of Cooperatives and Small and Medium Enterprises of the Republic of Indonesia reported that the number of MSEs contributed to employment was up to 97%, and the contribution to GDP was 61% (Kemenkop-UMK, 2021). Thus, MSEs are business entities that are relied upon to

alleviate unemployment and increase per capita income.

The occurrence of the Covid-19 pandemic is a signal that there is a periodic decrease in income earned by the community (Handhika, 2017; Prihatminingtyas, 2019). The Covid-19 pandemic has had an impact on the management of working hours, total workforce, the education level, the use of information technology, and philanthropy from the government to MSEs. Zimpelmann et al. (2021) uncovered that working hours can affect income. Other studies explained that the number of hours worked significantly affects workforce productivity (Vallo and Mashau, 2020). Fernando (2016) argued that the longer MSE actors operate their businesses, the more opportunities they will have to sell their products and indirectly open up opportunities to increase their income. Based on the previous literature, it can be seen that several factors such as working hours, total workforce, education level, information technology, and government capital assistance have a close relationship with income generation.

The workforce is the most critical resource in developing the quality of products and services for consumers to make an economic contribution to MSEs (Mahayasa & Yuliarmi, 2017:110). Logically, the more significant the total workforce, the higher the MSE's business income. More specifically, Imron et al. (2008) revealed that the more the total workforce, the higher the quality of service to buyers, which manifests in an increase in income.

Education level also has an impact on income. Previous studies have shown that the education level of business actors increases knowledge and understanding of business strategies and upsurges insight into the marketing process, which will manifest in increased productivity and income (Matama, 2016; Fernando, 2016; Veselinovic, Mangafic, and Turulja, 2020).

The development of information technology also affects the income of MSEs. Goos et al. (2019) elucidated that technology is essential in income generation. The existence of information technology will enhance compulsory skills for the workforce to have better working abilities. Meanwhile, Pessemier (1978) explained that three elements of knowledge determining marketing success are knowledge of market needs, business environment, and technology.

Tambunan (2009)discovered evidence that, basically, MSEs in Indonesia tend to be underdeveloped because most MSEs experience a lack of capital and difficulties in marketing. This finding is different from research by (Prawira and Mutmainah, 2019), which proved that working capital, working hours, and the total workforce significantly affect MSE income. However, this evidence only applies to certain areas because Polandos, Engka, and Tolosang (2019) revealed that only business capital has an effect on income for MSEs in East Langowan, Minahasa, and North Sulawesi. Based on the gaps that occurred in several previous studies, this study aims to explore more deeply the income generation of MSEs in Indonesia as an indicator of business resilience.

# Literature Review and Hypothesis Development Economic growth theory

Economic growth describes the dynamic aspects of an economy, namely, observing how an economy is developing to determine the rate of economic growth in a country. From an accounting perspective, economic growth is closely related to an increase in people's income, leading to an increase in the gross domestic product (GDP) (Arsyad, 2010). Therefore, the increase in output per capita must be analyzed by viewing what is happening by observing the ability of the community to earn income. From the Neo-Classical theory's perspective, productivity and income growth of the community has a multi-dimensional impact on the economic development of a country from period to period (Aji and Lestyaningrum, 2021).

## **Income Theory**

The problem of income is not only viewed in the number but how the distribution of income received by the community (Bantika, Benu, and Kapantow, 2015). There are three factors that influence the direction of the distribution of income and expenditure in Indonesia. First, the essential factor is capital. Second, getting a job is for those who do not have sufficient opportunities to obtain full employment. Third, the rate of rural production, in this case, the most important is the production and price volatility of a product produced by the community. In Indonesia, the government plays a significant role in increasing community income growth through capital assistance to MSE actors (Rochmatullah and Probohudono, 2014).

#### Income

Mubyiarto (2013) explicated that income is a value of the overall production in the economy, obtained by adding up the total income of the production factors used in the production process. Goos et al. (2019) stated that income is a crucial element in a trading business because in conducting a business, of course, business actors need to know the value of total income earned during the business. Meanwhile, Handhika (2017) added that income is the result that has been obtained from a type of business activity that produces a profit. Income is highly influential for the whole life of a business; the more significant the income earned, the more powerful the ability of business actors to finance all expenses and activities that will be conducted by their business.

#### Micro and Small Business

According to Law 20/2008, micro, small, and medium enterprises are productive economic businesses that stand alone, which are performed by individuals or business entities that are not subsidiaries or branches of companies, which are owned, controlled, or become part of either directly or indirectly from medium or large businesses. Zaharuddin (2010) elucidated that a business or what is called a company is a form of business that conducts activities permanently and continuously intending to obtain profits, whether organized by individuals or business entities in the form of legal entities, which are established and domiciled in an area within a particular area in a country. Several factors that affect the capability of MSEs in obtaining income include working hours, total workforce, education level, technology, and government capital assistance (Rochmatullah and Probohudono, 2014; Ilmiyah, 2020; Hui et al., 2020; Rosita, 2020; Prayitno, and Yustie, 2020; Aji and Lestyaningrum, 2021).

## Working hours

According to the Indonesian Statistics (BPS), the number of working hours is the length of time hours used for work of all jobs, excluding official work breaks and working hours used for activities outside of work during the week. The higher the working hours or time allocation we give to open a business, the higher the probability of turnover received by merchants, so that the welfare of



merchants will be more maintained and can meet the needs of the merchant's family (Zimpelmann et al., 2021). Working hours are the length of time used to run a business, starting from preparation to the business closing. The allocation of business time and working hours is the total business time or business hours a merchant uses in trading (Rosita et al., 2020).

#### Total workforce

The workforce is the population who are of working age. According to the Law of the Republic of Indonesia 13/2003, it is stated that the workforce is everyone who can do work to produce goods or services both to meet their own needs and for the community.

Sumarsono (2003) defined the workforce as everyone willing to work. This definition of the workforce includes those who work for themselves or family members who do not receive payment in the form of wages or those who are actually willing and able to work. They are forced to become unemployed because no job opportunities are available.

#### **Education level**

Education is a process of learning the knowledge, skills, and habits of a group of people passed down from one generation to the next through teaching, training, and research (Veselinovic, Mangafic, and Turulja, 2020). Meanwhile, Fernando (2016) declared that education is the most critical thing in life. With education, a working-age person can compete in the job market. Thus, education can be used as an indicator of the quality of the workforce. The education level of an employee can also increase business competitiveness and improve the performance of a business. The higher the asset value, the higher their ability to work.

## **Information Technology**

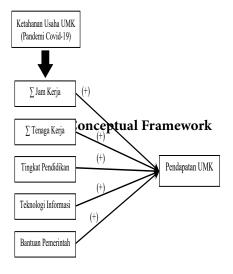
Nowadays, technology has developed very promptly, starting from the development of information technology, computer technology, machine technology, and many other technological developments that are highly useful for human life. Currently, the use of the word technology is commonly used for everything that has a technical nature to facilitate human work and is a cultural product that is intentionally or unintentionally

made by humans (Aji and Listyaningrum, 2021). Noviono and Pelitawati (2019) explained that technology is a scientific method used to achieve practical goals and is one of the applied sciences; it is a whole means to provide goods needed for the survival and comfort of human life.

## Government capital assistance

One of the policies conducted by the government in restoring the economy in Indonesia presently is by providing capital assistance to the Micro and Small Businesses (MSEs) sector. Capital assistance is the provision of assistance in the form of money from the government to business owners, which aims to protect against possible social risks (Gosa et al., 2021).

Regulation of the Minister of Social Affairs of the Republic of Indonesia 1/2019 stipulated that capital assistance is an expenditure in the form of money transfers provided by the government to the poor or underprivileged to protect the community from possible social risks and increase economic capacity and community welfare. Capital assistance is beneficial for facilitating MSEs with a lack of capital, so that it does not hinder business progress. It is because, basically, the capital factor is the primary concern to develop a business. Distribution of capital assistance is an appropriate alternative in overcoming the problem of poverty, where capital assistance can assist the sustainability of MSEs, which are believed to absorb the workforce so that they can maximize their business and increase income (Rochmatullah and Probohudono, 2014).



| Ketahanan usaha<br>UMK | MSE business resilience |
|------------------------|-------------------------|
| Jam Kerja              | Working Hours           |
| Tenaga Kerja           | Total Worforce          |
| Tingkat Pendidikan     | Education Level         |
| Teknologi Informasi    | Information Technology  |
| Bantuan Pemerintah     | Government Assistance   |
| Pendapatan UKM         | MSE Income              |

# Hypothesis development

Working hours are the duration used to run a business from the time the business opens to the selling business closing every day. Working hours are highly influential because the longer the working hours used by merchants to sell their products, the more significant the number of goods offered, and the more excellent the opportunity to earn income (Rosita et al., 2020). The results of research conducted by Alfiana (2021), Prayitno (2020), Rosita (2020), and Prawira (2019) showed that working hours have a positive and significant effect on income. The hypothesis (H1) is formulated as follows.

**H1:** There is a positive and significant effect of working hours on MSE income

The total workforce is people who work to meet consumer demand. The total workforce is a leading factor affecting the production process and serving buyers that support the survival of a business. The more the total workforce, the more the quality of service to buyers will increase to feel satisfied with the services provided, and more customers will increase income (Imron et al., 2008). The research results conducted by Prawira (2019) and Artini (2019) uncovered that the total workforce has a positive and significant impact on MSE income. Hypothesis (H2) is formulated as follows.

**H2:** There is a positive and significant effect on the total workforce on MSE income.

Education is a form of investment in human resources that plays a role in spurring economic growth. According to Fernando (2016), the education level is an essential topic in a person's life; with education, a working-age person can compete in the job market. The higher the

education, knowledge, and information gained to increase understanding can enhance performance and productivity, which will increase income. This hypothesis is reinforced by research by Sidik and Scientific (2021) and Julianto and Utari (2019), which discovered that the education level has a positive and significant effect on operating income. Hypothesis (H3) is formulated as follows.

**H3:** There is a positive and significant effect on the education level on MSE income.

MSEs experienced limitations in the use of technology, which hindered business development. The technology that business actors can use is the utilization of technological and internet-based application developments provided by digital platform companies to market and sell service products to sustain business income. By marketing or promoting their sales on social media or through online sales, merchants can sell their goods in their offline or online stores (Hasanah et al., 2020). This hypothesis is supported by research conducted by Aji and Listyaningrum (2021) and Hasanah et al. (2020), showing that technology positively affects income. Hypothesis (H4) is formulated as follows.

**H4:** There is a positive and significant effect of information technology on MSE income.

Capital assistance is the provision of money by the government to business owners, aiming to protect against possible social risks (Gosa et al., 2021). Capital can be interpreted as all forms of wealth that can be used directly or indirectly in the production process to increase output. The total capital of a business used will significantly affect profits; the more significant the capital used, the more goods that can be obtained and resold, so that the income earned by merchants will increase. Polandos et al. (2019) and Prawira and Mutmainah (2019) stated that business capital positively influences merchants' income. Hypothesis (H5) is formulated as follows.

**H5:** There is a positive and significant effect of government capital assistance on MSE income.

#### **RESEARCH METHODS**

## **Data and Data Sources**

This study is a quantitative study that employed secondary data in the form of an operational report



on Micro and Small Enterprises (MSEs) in 2021. Researchers obtained data by referring to research from (Prayitno and Yustie, 2020) by directly visiting the research object, namely MSE actors in Klaten Regency. Some of the data that the researchers used referred to research from (Sumarsono, 2003; Mubyiarto, 2013; Rochmatullah and Probohudono, 2014; Fernando, 2016; Rosita et al., 2020; Aji and Listyaningrum, 2021), namely the amount of income; length of working hours, total workforce, education level, use of information technology, and working capital assistance from the government.

## Population and sample

The population in this study was MSE actors in Klaten Regency, Central Java, Indonesia. Meanwhile, the purposive sampling method was used to determine the sample with certain criteria according to the research objectives (Ghozali, 2011). The following are the sampling criteria used in this study:

- 1. MSE actors recorded complete financial statements.
- MSE actors registered with the Cooperatives and UMKM Service in Klaten Regency.

Therefore, the researchers obtained 50 MSEs as the sample in this study.

## **Data Analysis Method**

The data were processed using SPSS software 21.0 version. Researchers examined the hypothesis using the multiple linear regression method. This method is frequently used in previous research as a tool to identify the influence between the independent variable (X) and the dependent variable (Y) (Wang et al., 2013; Amoozad-Khalili et al., 2019; Ciulla and D'Amico, 2019; Mehmanpazir, Khalili-Damghani and Hafezalkotob, 2019). The test was completed using the benchmark of simultaneous regression testing (Significance F), the benchmark of partial regression testing (coefficient- $\beta$ ), and testing the coefficient of determination (R2).

The multiple linear regression model equation is mathematically shown in Model 1.

#### Model 1.

Log PDP =  $\alpha + \beta 1$  JK +  $\beta 2$  JTK +  $\beta 3$  dTP +  $\beta 4$  dTQ +  $\beta 5$  log BP +  $\mu$ 

#### Information:

Log PDP = Logarithm of MSE income

 $\alpha$  = Constant (Intercept)

JK = Number of working hours per day

JTK = Total workforce

dTP = Education level (dummy)

dTQ = Information Technology (dummy) Log BP = Logarithm of Government capital

assistance

 $\beta$  = Regression coefficient (Slope)

 $\mu$  = error term

## Variable Operational Definition

The independent variables and dependent variables of this study can be described in Table 1.

#### RESULTS AND DISCUSSION

## Normality test

Table 2 shows that the significance value is asimp. Sig (2-tailed) was 0.200. The value was more significant than 0.1. Based on decision-making in the Kolmogorov-Smirnov normality test above, it can be concluded that the data used in this study are normally distributed. Thus, the assumptions or statements of normality in the regression model have been met.

#### **Multicollinearity Test**

The basis for decision-making from the multicollinearity test was done by viewing the tolerance and VIF values. Based on the output of Table 3, it can be seen that the tolerance value of each variable was more significant than 0.1. Meanwhile, the VIF value for each variable was less than 10. Based on the basis for making decisions on the multicollinearity test, the researchers confirm that there is no indication of multicollinearity in the regression model.

## **Heteroscedasticity Test**

Based on Figure 1, the researchers can see that the data points spread above and below or around the value 0. In addition, the points were not grouped right above or below. The distribution of data points did not form a certain pattern, such as wavy, which widened, then narrowed, and widened again. Based on this analysis, the researchers can conclude that there is no heteroscedasticity problem. Hence, a good and ideal regression model can be met.

## Hypothesis testing

Output Table 4 is a summary of the results of hypothesis testing using the model in this study. The variables JK, JTK, dTP, and dTQ had a probability above the 10% significance level. These results indicate that the length of working hours, the total workforce, the education level, and the use of information technology could not explain the resilience of MSEs' efforts to earn income during the Covid-19 pandemic. On the other hand, the Log BP variable had a probability below the 5% significance level. This result implies that capital assistance from the Government significantly impacts the income generation of MSEs during the Covid-19 pandemic. The R-square value was 0.284, which means that the independent variable could explain the dependent variable by 28.4%, while 71.6% was influenced by other variables, which were not discussed in this study. Meanwhile, the statistical F value had a probability level of 1%. It indicates that the model used in this study has fulfilled the goodness of fit. This test confirms research from (Rochmatullah and Probohudono, 2014), which elucidated that the Government's social assistance for working capital is a social protection strategy for people who experience social vulnerability. Based on the results of this test and previous research, it can be seen that the Government plays an essential role in maintaining the business resilience of MSEs during the Covid-19 pandemic. In the discussion section, researchers explored the results of this test more deeply.

#### Discussion

The test results showed that working hours had no effect on income. It is due to the relatively tough competition between merchants who sell similar trademarks in one location. Therefore, MSE actors have little opportunity to earn high income even if they increase working hours or add a workforce. This result is in line with research from (Artaman, 2015; Damariyah, 2015), which proved that working hours had no effect on income.

Samuelson (1948) revealed that the workforce is the most crucial input/factor of production. The

workforce's expertise in performing their duties and responsibilities is the key to increasing productivity and profitability (Abdel-Malek, 1987; Kathuria and Davis, 2001; Liu and Wall, 2005; Chen and Klimoski, 2007; Fahmi, 2019). However, the results of the researchers' observations showed that the Covid-19 pandemic in Indonesia had resulted in the Government taking a policy to completely stop operations in business units, which manifests as layoffs in most business entities. It can be interpreted that MSE income is more influenced by innovation opportunities lost by business actors due to the policy of cessation of business operations.

Researchers' observations on the use of information technology showed that the current development of social media did not positively impact consumer satisfaction. Most customers were from rural communities, most of whom did not know how to function and use social media. They felt that social media was very inconvenient and preferred to use manual facilities. In addition, many MSEs did not use social media because buying and selling transactions by many customers were performed using a debt-receivable system, especially for buying and selling essential commodities. This fact indicates that the use of information technology in buying and selling transactions is difficult during the Covid-19 pandemic. The results of this observation are in line with the research from (Noviono and Pelitawati, 2021), which showed that information technology had no effect on income.

Capital is significant in increasing business income. Additionally, capital has a role in determining the growth and development of a company. The results of the researchers' observations indicated that capital assistance from the government could increase the capability of MSEs in running their businesses during the Covid-19 pandemic. Many MSEs had experienced business losses, resulting in an income deficit, which manifested as a decrease in working capital. Government capital assistance revived the sluggish MSE business climate during the Covid-19 pandemic (Rochmatullah and Probohudono, 2014).



Table 1. Definition of operational variables

| Variable                         | Symbol  | Operational definition  | Source                             |
|----------------------------------|---------|---|------------------------------------|
| Working hours                    | JK      | Merchants use the time to trade or open their businesses to serve consumers daily.  | Rosita et al., (2020)              |
| Total workforce                  | JTK     | The total workforce recruited in production and sales activities.   | Sumarsono (2003)                   |
| Education level                  | dTP     | Dummy variable level of formal education taken by MSE actors.  0 = Graduated from primary/secondary school (SD/SLTP)  1 = Graduated from high school (SLTA)                             | Fernando (2016)                    |
| Information Technology           | dΤQ     | Dummy variable of the use of information technology for sales and marketing activities, such as the utilization of social media.  0 = did not use social media.  1 = used social media. | Aji & Listyaningrum (2021)         |
| Government Capital<br>Assistance | Log BP  | The logarithm of the amount of capital assistance from the Government   | Rochmatullah & Probohudono, (2014) |
| MSE income                       | Log PDP | The logarithm of the amount of income per month.  | Mubyiarto (2013)                   |

**Table 2. Normality Test Results** 

| One                      | e-Sample Kolmogorov-Smirn | ov Test                 |
|--------------------------|---------------------------|-------------------------|
|                          |                           | Unstandardized Residual |
| N                        | ,                         | 50                      |
| Normal Parameters a,b    | Mean                      | 0.000                   |
| Normal Parameters ""     | Std. Deviation            | 0.093                   |
|                          | Absolute                  | 0.119                   |
| Most Extreme Differences | Positive                  | 0.119                   |
|                          | Negative                  | -0.059                  |
| Test Statistic           |                           | 0.119                   |
| Asymp. Sig. (2-tailed)   |                           | $0.200^{c,d}$           |

#### Notes:

- a. Test distribution is Normal;
- b. Calculated from data;
- c. Lilliefors Significance Correction;
- d. This is a lower bound of the true significance.

**Table 3. Multicollinearity Test Results** 

| Model 1         | Unstandardize      | d Coefficients | Standardized |        |       | Collinearity S | tatistics  |
|-----------------|--------------------|----------------|--------------|--------|-------|----------------|------------|
| Wiodel 1        | Olistandardized    | d Coefficients | Coefficients | t      | Sig.  | Confidently S  | itatistics |
|                 | В                  | Std. Error     | Beta         |        | ·     | Tolerance      | VIF        |
| (Constant)      | 5.721              | 0.335          |              | 17.101 | 0.000 |                |            |
| JK              | 0.010              | 0.009          | 0.157        | 1.093  | 0.280 | 0.792          | 1.262      |
| JTK             | 0.002              | 0.010          | 0.032        | 0.244  | 0.808 | 0.972          | 1.028      |
| dTP             | 0.043              | 0.033          | 0.180        | 1.307  | 0.198 | 0.854          | 1.171      |
| dTQ             | 0.029              | 0.039          | 0.106        | 0.733  | 0.467 | 0.782          | 1.278      |
| Log BP          | 0.154              | 0.061          | 0.337        | 2.542  | 0.015 | 0.923          | 1.084      |
| Note: Dependent | Variable (Log PDP) |                |              |        |       |                |            |

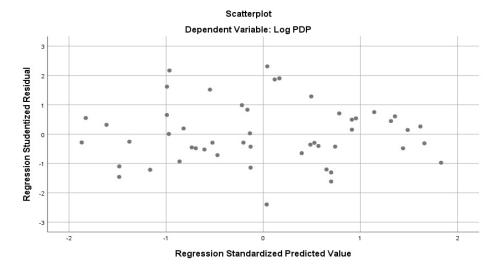


Figure 1. Heteroscedasticity Test Results

Table 4. Results of The Regression Model

|               | Dependent Variable:<br>Log PDP |                    |  |
|---------------|--------------------------------|--------------------|--|
|               | Predicted<br>Sign              | Model 1            |  |
| JK            | +                              | 0.010<br>(0.009)   |  |
| JTK           | +                              | 0.002<br>(0.010)   |  |
| dTP           | +                              | 0.043<br>(0.033)   |  |
| dTQ           | +                              | 0.029<br>(0.039)   |  |
| Log BP        | +                              | 0.154**<br>(0.061) |  |
| Constant      |                                | 5.721<br>(0.335)   |  |
| R-square (R2) |                                | 0.284              |  |
| Sig. F Stat   |                                | 0.010*             |  |
| N             |                                | 50                 |  |

## **CONCLUSION**

This study explored more deeply the capabilities of MSEs in obtaining income during

the Covid-19 pandemic by taking the object of research in Klaten Regency. This study combined several variables that affect MSE income, such as working hours, total workforce, education level, technology, and government capital assistance. This study indicated that only capital assistance from the government had a significant impact on the capability of MSEs to earn income. Therefore, the researchers concluded that providing working capital to MSEs in Indonesia is the most effective strategy for increasing MSEs' business resilience during the Covid-19 pandemic.

#### **IMPLICATION**

MSE is one of the most critical aspects of driving economic growth in Indonesia. However, many MSEs have less knowledge of business strategy. Hence, this study attempts to contribute to the development of MSEs. The results of this study indicated that capital assistance from the government determined the capability of MSEs in obtaining income. Nevertheless, this study only discussed micro and small businesses, so it cannot explain the impact of the Covid-19 pandemic on medium-level and large-scale businesses. The researchers recommend further research exploring the impact of the Covid-19 pandemic on medium-level and large-scale businesses to identify the differences.



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