DOUBLE-EDGED SWORD EFFECT FROM COVID-19 FOR MICRO, SMALL, AND MEDIUM ENTERPRISES (MSMES) IN INDONESIA

ABSTRACT: Micro, Small, and Medium-Sized Businesses are crucial in Indonesia's development. Covid-19 significantly impacts the economies of all nations, including Indonesia. Thus, the study's primary objective was to assess the impact of Covid-19 on Micro, Small, and Medium-Sized Businesses in Indonesia. This study utilized a quantitative research methodology. The information was acquired from 399 Micro, Small, and Medium-Sized Businesses in Indonesia. In the research, MICMAC software is utilized to analyze the acquired data. The study found that Covid-19 affected the economic activities of Micro, Small, and Medium-Sized Businesses. The outcomes of this study will assist the decision-makers of Micro, Small, and Medium-sized Businesses in determining how to manage future pandemics better.

Keywords: Covid-19, Multicriteria Decision, Financial Risk, MSMEs, and Indonesia, Economic Loses, MICMAC

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1. Introduction

The impact of Covid-19 extends beyond the countries economies. While it also affected the Taxpayer's ability to pay taxes by affecting their employers and jobs. Thus, the Covid-19 pandemic had a significant impact on the global economy. The countries make a range of extraordinary efforts to reduce the effects of Covid-19 on the global economy. In addition, governments spend unprecedentedly on electronic stimuli, economic stabilization, and health care for the people. The economic stimulation consists of temporary labor assistance and direct payments (Hartmann et al., 2022). Experts projected that Pandemic 19 would have a detrimental influence on the economy worldwide. As a result, fraud and people's income are decreased. It causes people to look for the short-term benefits of the scam while ignoring its long-term consequences (Karpoff, 2021). Similar to the viewpoint of Alm et al. (2020), who stated that the Covid-19 issue has made taxpayer compliance challenging.

The Indonesian government imposed restrictions on social distance over the entire nation. People were required to keep a spacing of 1,8 meters beginning in the first quarter of 2020. The mobility of individuals was also restricted between major cities like Jabodetabek, Jakarta, and many more. According to researchers, this legislation has a detrimental impact on the transportation industry, as passengers have decreased in online taxis, bajaj, taxis, public transportation, busways, buses, computer trains, and airplanes. From the beginning of 2020, various transportation-related commercial activities have been significantly impacted, including a fall of 80% in the number of buses traveling within cities. Companies have experienced survival challenges as their output has decreased, affecting the employment rate inside the nation

as well (Inegbedion, 2021). One of the primary causes of Covid-19's demise is a 25 to 20 percent annual fall in the productivity of the largest firms. Additionally, consumer expenditures have decreased by a third. Hence, the economy of several nations is negatively impacted.

Due to these issues, it has become crucial for academics to evaluate the factors associated with Covid-19, an extremely rare virus. However, the influence of this virus on productivity, demand, supply, and other organizational elements is extremely complex, particularly in the setting of family businesses and MSMEs. This crisis severely impacts the global business sector. Each nation has tried distinct long-term and short-term measures to address this issue. It is quite challenging for nations and organizations to comprehend the effects, influence, and phenomenon of Covid-19 on MSMEs (Cirera et al., 2021).

On a global scale, Covid-19 has influenced the trade and GDP of several nations, destabilizing the equilibrium between capital and labor. Covid-19 has harmed the cost of international trade, the decline of several services, and the substitution of alternative items for others. The results indicate that the GDP of both developed and developing nations has decreased since March 2020. Due to policies of social distancing, the output of domestic organizations and services has plummeted, resulting in a decline in the performance of the service sector. Thus, it is essential to make decisions regarding the elements that can mitigate Covid-19's impact on SMEs and MSMEs (García-Pérez-de-Lema, Madrid-Guijarro, & Durendez, 2022). So, the purpose of this research is to examine and investigate the variables of Covid-19 that have harmed MSMEs and to determine how they can survive in the future.

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2. Literature Review
History of Viruses

Acute respiratory tract infections, often known as ARTIs, are among the most prevalent infections that affect anyone regardless of gender or age. Various microorganisms, including several viruses and bacteria, cause the majority of ARTIs, viruses, and bacteria including coronavirus, adenovirus, parainfluenza, Haemophilus, and pneumonia cause this disease. Regarding contagiousness and medical emergency, the most severe illnesses include coronaviruses, influenza A or B, and RSV, which have caused numerous pandemics and epidemics (Hoque et al., 2021).

Infection with RSV, also known as respiratory syncytial virus, is usually associated with aggravated and wheezing lung illness. This is the most prevalent disease among children and newborns worldwide. This disease is also the cause of numerous outbreaks. RSV virus is a member of the paramyxoviridae family of pnemoviruses. This virus' lipid envelope and RNA genome are not segmented. In the past, RSV was related to an infection that began around 1170 A.D. Maimonides was the first to describe and detect the association between recurring Wheezing and this virus at that time. "I conclude that this illness (asthma) begins with a common cold, particularly during the rainy season, and that the patient is compelled to gasp for air 24 hours a day" (Kaler et al., 2023).

Influenza Virus

Influenza, whose name comes from the Latin word "Influence" or "influential," is one of the most lethal viruses in history. Many viruses belonging to the family Orthomyxoviridae are responsible for causing this disorder. There are a total of eight or seven RNA segments connected with this virus. There are three varieties of these viruses, and A, B, and C are described. The type A influenza virus is the most lethal strain. Historically, the influenza virus has between 294,000 and 518,000 known cases. Hence, it is considered one of the most hazardous viruses (Demicheli et al., 2018).

The Spanish flu occurred in 1918 and is considered one of the deadliest in history. A distinct influenza virus causes this illness. The virus responsible for influenza is known as H1N1. This virus is typically considered the "worst medical catastrophe in history." This virus originated in France during the winter of 1918. Thus, thousands of soldiers perished. In just eight months, this epidemic spread to other parts of the world and killed approximately 40 million people (Demicheli et al., 2018). There were three waves of this virus throughout history, but the 1918 wave was the most deadly, killing millions worldwide.

The H1NI virus was the cause of the Spanish flu. In the second month of 1957, a second comparable strain, H2N2, also known as Asian influenza, arose. Southeast Asia was the origin of this disease. It passed through Japan, Taiwan, and Singapore before spreading to other regions. Due to a lack of immunity, adults older than 60 have contracted these illnesses. Like other viruses, this sickness appeared in multiple waves and killed approximately 2 million people worldwide. The H3N2 strain of Asian influenza changed much later and was designated later. This disease first appeared in Hong Kong in 1968. (Cirera et al., 2021). This virus is also known as the Hong Kong virus due to its origin. This contagious virus has multiple symptoms, including body aches, sore throat, cough, and fever. This condition can be fatal if not appropriately handled (Elkhatib et al., 2022).

In 2009, the United States and Mexico experienced a second outbreak of an illness with ties to the Influenza A virus. This virus was identified as the cause of the biggest number of swine influenza cases. This virus originated in pigs. This outbreak was labeled a pandemic in June 2009 after it expanded to more than 30 nations within a few weeks. This virus infected 134000 persons globally (da Costa et al., 2020) and killed 800 people.

Covid-19 Pandemic

In 2019, new viruses and pandemics with links to an old virus known as "coronavirus" surfaced, demonstrating the world's susceptibility to large pandemics. Cov-19 is one of the three major coronavirus epidemics, along with MERS-CoV and SARS-CoV. This virus is the most lethal of all prior viruses. The spike of this virus is tenfold that of a typical influenza virus. The official name of this virus was SARS-CoV-2, and it rapidly spread from China to different parts of the world. Eventually, in March 2020, the World Health Organization (WHO) proclaimed this virus a pandemic since more than 118,500 persons have contracted this virus in 100 or more countries. It is believed that this virus originated in bats before being transmitted to humans. According to the World Health Organization, by 2023, more than 6.1 million people will have died, and 460 million will have been infected due to this virus. This virus can transmit from individual to individual (Cascella et al., 2023).

Pandemic-19 has an impact on the daily lives of folks. This sickness disrupts life by requiring extensive lockdowns, public venues, businesses, and schools shut down, and travel restrictions. Governments have made massive efforts to combat this disease. Treatments, vaccine development, contact tracing, and mass testing are included in these initiatives. Globally, multiple vaccines are being developed for use in emergencies. On the other hand, many nations have initiated measures to limit or prevent the global spread of this pathogen (Chaturvedi, Vishwakarma, & Singh, 2021).

This virus is a global catastrophe since it combines a lot of biological hazards with several vulnerabilities. This virus's weaknesses include public transportation, social work practices, informality, overcrowding, and the health care system. The economic and human consequences of Covid-19 are extraordinary. This virus has devastating effects on the international and national economies. Due to this infection, several distinct types of organizations suffer varying degrees of loss. The challenges of transportation interruption, raw material shortage, cancellation of export orders, disruption of the supply chain, and a decline in demand have particularly plagued global businesses (Pedrosa et al., 2020). Yet, it is obvious that Covid-19 has negative effects on several enterprises.

Micro, Small, and Medium Enterprises

MSME, a micro, small, and medium enterprise, is an independent organization with specific financial and operational bounds founded by distinct groups or states with specific business, interests, cultures, and logical spirits (Jassim & Khawar, 2018). According to academics, MSMEs can maintain a particular number of employees, assets, and revenues below a given threshold. These organizations are created following the laws of a single nation or a group of nations. A country's legislation defines the term "micro, small, and medium-sized enterprise" differently. MSMEs are typically the heartbeat of both industrialized and emerging economies. MSMEs employ the majority of individuals in developing nations. These firms provide 33% of the national gross domestic product and 45% of the employment rate. Undoubtedly, MSMEs play a crucial role in the nation's economic development. These organizations are significant sources of employment, innovation, and business proficiency (Pedraza, 2021).

The number of employees in MSMEs ranges from one to nineteen. On the other side, medium firms employ between 20 and 99 workers. In several economies, MSMEs represent vital industrial sectors. In Indonesia, this industry survived the 1998 financial crisis because it had a greater capacity for survival than large-scale industries. This is because these organizations require very little cash. More than ninety percent of the industry in Indonesia is comprised of MSMEs (Koerniawan et al., 2020).

Consequently, MSMEs have a major role in the economy of Indonesia, and this sector is also empowered. Moreover, this sector is essential to the nation's economic prosperity. Indonesia's economic growth heavily depends on MSMEs (Kurniawati & Setiawan, 2019).

Researchers have reported that Covid-19 has a greater impact on MSMEs than on large businesses. In comparison to MNCs, these SMBs lack resources, particularly managerial and financial resources. Thus, Covid-19 has a greater effect on MNCs than on MSMEs. Moreover, these forms mostly depend on their routine operations and a few consumers. Thus, Covid-19 affected the stockpiles of MSMEs globally since these companies ran out of inventory (Takeda, Truong, & Sonobe, 2022).

Covid-19 Impact on Micro, Small, and Medium Enterprises

Throughout the previous two decades, MSMEs have been regarded as the backbone of Indonesia's economy. Since the first quarter of the Covid-19 pandemic, however, MSMEs in Indonesia have been one of the most vulnerable economic sectors in the country. The pandemic harms the fundamental ecosystem of Indonesian business. Before the pandemic, approximately 98% of all businesses in Indonesia were micro-businesses, while only 1.4% were SMBs. MSMEs dominated the Indonesian business market, accounting for 58% of the gross domestic product and 90% of employment (Nugraha et al., 2020).
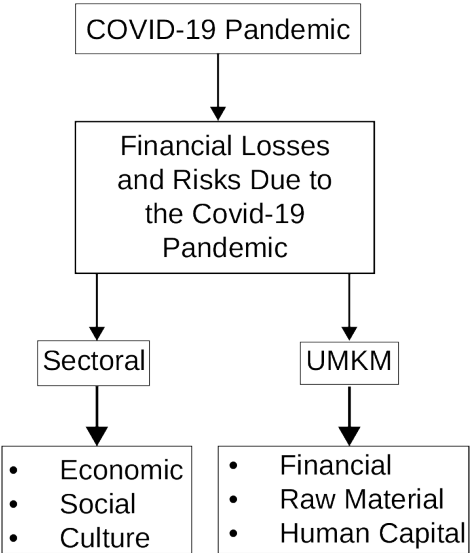
More than fifty percent of MSMEs in Indonesia had temporarily shuttered because of Covid-19. Its temporary closure is mostly the result of a disturbance in the supply chain and a decline in product demand. Moreover, MSMEs are badly affected by the closing of shopping malls and markets. These micro, small, and medium-sized enterprises have decreased their workforces by sixty percent. Over half of the daily wage employees employed by MSMEs are also laid off (Shinozaki & Rao, 2021). In Bali and JAVA, the impact of Covid-19 on employment was more negative. These cities' economic activities and population density are significant factors in their negative impact. In addition, the service industry level in these cities is relatively high. Yet, the influence of Covid-19 differs amongst businesses. Due to the pandemic, the hospitality, food and beverage, personal services, culture, arts, entertainment, and retail sectors were severely impacted. The Indonesian government has officially assessed the impact on these businesses. One of the primary reasons that MSMEs are affected by this virus is their economic fragility. The survey findings indicate that over half of MSMEs have inadequate savings (Cahigas et al., 2022). In addition, roughly one-third of organizations will conclude their case within one month.

Paying back bank loans is the second greatest concern for Indonesia's SMEs. During Covid-19, accessing capital became a serious concern for MSMEs, leading to the

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issue of debt repayment. Additionally, it became difficult for banks to obtain credit from other banks. Even though the Indonesian government made new loan opportunities available, few enterprises chose to pursue funding. That was due to administrative eligibility and complexity concerns with MSMEs. Moreover, Covid-19 accelerates the adoption of digital technology (Supari & Anton, 2022). Some small and medium-sized enterprises benefited from digitalization, such as e-commerce.

Data

Small and medium-sized enterprises are more susceptible to the effects of Covid-19 than large enterprises. Large-scale firms that Covid-19 impacts can temporarily cease operations and resume operations once things return to normal since they have significant access to money and funding. Conversely, many affected SMEs cannot reopen when conditions return to normal since their money has been depleted to pay for family needs (the income stream is stuck while the business stops operating). Covid-19 can potentially reduce the standard of living of the families of SME actors and workers and low-paid workers in big and medium-sized businesses, even below the poverty line. A community's economic welfare level can be divided into 10 deciles based on income, from the lowest decile 1 to the greatest decile 10. (Supriyanto, 2006).

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        COVID-19 Pandemic
               │
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        Financial Losses
        and Risks Due to
         the Covid-19
           Pandemic
         │           │
         ▼           ▼
     Sectoral      UMKM
       │            │
       ▼            ▼
   • Economic   • Financial
   • Social     • Raw Material
   • Culture    • Human Capital
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Graph 1. Frame Work Thinking

Based on the preceding explanation, the research team is interested in studying "Economic Losses and Financial Risks Due to the Covid-19 Pandemic in the DKI Jakarta Region." This study will assess sectoral and MSME losses, as the DKI Jakarta region is included in the red zone and thus suffers a significant economic loss.

Table 1. Key Variables

N°	long label	Short labels	Theme
1	Gross Regional Domestic Product	GDP	Sectoral-Economy
2	Inflation	Inflation	Sectoral-Economy
3	Amount of Consumption	Consumption	Sectoral-Economy
4	Total Food Production	Food	Sectoral-Economy
5	Locally-generated revenue	PAD	Sectoral-Economy
6	Exchange rate	Exchange rate	Sectoral-Economy
7	Interest rate	Interest rate	Sectoral-Economy
8	Unemployment	Unemployed	Sectoral-Social
9	Poverty level	Poor	Sectoral-Social
10	Crime Rate	Crime	Sectoral-Social
11	Death Rate	Death Rate	Sectoral-Social
12	Income inequality	Inequality	Sectoral-Social
13	Level of education	Education	Sectoral-Social
14	Regional tourism	WisDa	Sectoral-Culture
15	Individualist	Individual	Sectoral-Culture
16	Panic Buying	PaningBuying	Sectoral-Culture
17	Work Culture	Bud.Work	Sectoral-Culture
18	Social distancing	PS	Sectoral-Culture
19	Exile	Exile	Sectoral-Culture
20	Working capital	Working capital	MSME-Financial
21	Debt Ratio	Debt	MSME-Financial
22	Income	Profit	MSME-Financial
23	Inventory Turnover	Inventory	MSME-Financial
24	Production Volume	V.Production	MSME-Raw Material
25	Estimated purchase price of raw materials	THB	MSME-Raw Material
26	Storage Fee	B.Save	MSME-Raw Material
27	Raw Material Durability	DTBB	MSME-Raw Material
28	Work productivity	Pro.Work	MSME-HR
29	Attitude and Behavior Change	SPK	MSME-HR
30	Communication Pattern	Pol. Kom	MSME-HR
31	Professionality	Professional	MSME-HR

Notes. MIMAC data processing, 2022.

According to the table above, this study includes 31 critical variables. After that, the key variables will be mapped into the Matrix of Direct Influence (MDI), which determines the intensity of the key variables' influence. The intensity of influence is measured on a scale from 0 to 3 and P. (Potential). The larger the number in the MDI table, the greater the evidence that the variable has a significant impact, and the symbol P represents a Potential.

3. Methodology

This research uses a quantitative method. Quantitative approaches test objective theory and the relationship between variables in a study (Creswell, 2014). Identifies financial losses and hazards caused by the Covid-19 epidemic using three variables: Sectoral, MSMEs, and the quantitative method. Quantitative methods involve primary and secondary data as variables that can be measured and evaluated using statistical methods (Wahidmurni, 2017).

Table 2. Operational Table

No	Target	Variable	Dimensions and/or Indicators	Measurement Scale
1.	Identifying Financial Losses and Risks Due to the Covid-19 Pandemic	Sectoral	Economy Social Culture	ordinal
2.		MSME	Financial Raw material HR	ordinal

Source: Conclusions from previous research journals

This research population consists of MSMEs in DKI Jakarta Province. According to the head of the Department of Economics and Finance of the DKI Jakarta Province Government, the number of MSMEs in DKI Jakarta will reach 289,270 by December 2021. According to Elfil and Negida (2017), the complete population in this study has the same chance of being sampled based on the probability sampling technique employed for the sample (Rahmawati, 2020). The number of samples in this study, 399, was determined using the Slovin formula.

$$n=289270/(1+(289270 \times 0.05^2))=399.44$$
Rounding to 399

n: minimum number of samples
N: 1286 (Population)
1: Constant
e: 0.05 (error/fault tolerance)

From the calculation of the solving formula for determining the sample, the result is 399.44, which is used as a sample, then the number is rounded up to 399 samples.

The data source for this study is the Forum Group Conversation (FGD). According to Elliot & Associates, an FGD is a small group of six to ten individuals who engage in open conversations under the direction of trained facilitators. FGD serves as a secondary method for quantitative research or as a technique for triangulation (How-To Guide, 2016). FGD is utilized in this study to evaluate the degree or size of the value of the dependence between one variable and another, which will subsequently be used to examine research results using continuous analysis methodologies.

The MICMAC (Cross Impact Matrix Multiplication Applied to Classification) software developed by the Institut d'Innovation Informatique pour l'Entreprise as a structural renewal method from the previous qualitative one aided the sustainability analysis used to analyze the data for this study (Ariyani & Fauzi, 2019). MICMAC can assist in identifying the primary variables in a research study and classify the interpretive model features that will be used to draw policy implications (Sukwika, 2016). MICMAC (Benjumea-Arias, Castañeda, & Valencia-Arias, 2016).

The Mic Mac approach has three parts. These three steps involve defining the problem and identifying external and internal variables. The second step is the evaluation of the interdependence and influence of the various variables. This relationship was evaluated using a scale. The range of this scale is "p = potential, 3 = strong, 2 = moderate, 1 = weak, and 0 = none." This scale is useful for analyzing variables' levels of dependence and influence based on their position on the quadrant map (Benjumea-Arias et al., 2016). The Mic Mac analysis collects information about the variables in the form of MDI, also known as the matrix of direct impact and dependence of the variable, to assess the extent of the variable's influence on the other variables. MDI is one of the basic matrices used to compile the MII, also known as the matrix of indirect influence, which displays the level of the indirect impact of variables and MDPI in case of a future system change. The variables obtained from the MICMAC analysis results will be reclassified into four groups: the determinant variable, the relay variables, the dependent variables, and the autonomous variables (Fauzi, 2019).

4. Results

Table 3. Characteristic Matrix

Indicator	Value
Matrix size	31
Number of iterations	7
Number of zeros	541
Number of ones	168
Number of twos	172
Number of threes	51
Number of P	29
Total	420
Fillrate	43.70448%

Notes. MIMAC Data Processing, 2022.

In the table above, it can be seen that there are 31 matrices with an iteration value of 7. In the MDI table mapping, there is a rating scale with a value of 0 as high as 541, a value of 1 as high as 168, a value of 2 as high as 172, a value of 3 as high as 51, and a potential value as high as 29, yielding a total of 420.

Table 4. Sum. Matrix

N°	Variable	Total number of rows	Total number of columns
1	Gross Regional Domestic Product	33	28
2	Inflation	35	19
3	Amount of Consumption	29	20
4	Total Food Production	28	18
5	Locally-generated revenue	13	23
6	Exchange rate	31	20
7	Interest rate	22	19
8	Unemployment	23	16
9	Poverty level	34	14
10	Crime Rate	38	17
11	Death Rate	39	20
12	Income inequality	44	19
13	Level of education	41	19
14	Regional tourism	36	23
15	Individualist	18	14
16	Working capital	24	14
17	Debt Ratio	11	15
18	Income	21	28
19	Inventory Turnover	16	13
20	Production Volume	14	20
21	Estimated purchase price of raw materials	9	20
22	Storage Fee	12	22
23	Panic Buying	12	23
24	Raw Material Resistant Data	8	24
25	Work Culture	6	29
26	Social distancing	12	28
27	Exile	10	27
28	Work productivity	12	30
29	Attitude and Behavior Change	8	31
30	Communication Pattern	14	26
31	Professionality	12	26
	Totals	665	665

Notes. MIMAC Data Processing, 2022.

The matrix sum table reveals that the total number of variables contained in this variable is 665. In mapping factors into the four quadrants based on direct influence, the table above provides additional evidence that some variables have a very powerful influence in conjunction with other variables and as a factor in government policy decisions.

Table 5. Sum of Matrix

Iteration	Influence	Dependence
1	121%	95%
2	98%	100%
3	103%	100%
4	99%	100%
5	101%	100%
6	100%	100%
7	100%	100%
	Notes. MIMAC Data Processing, 2022.	

The table above shows that the stability of the variable is at an iteration value of 7, producing an influence and dependence value of 100%.
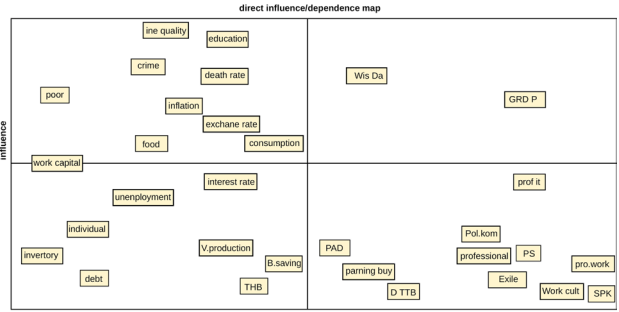

Fig. 1. Matrix of Direct Influence/Dependence Results
Note: Based on MIMAC Data Processing (2022)

The important factors of this study are grouped into four quadrants in the picture above. In quadrant I of the MDI map, poverty, crime, food production, income inequality, education level, mortality rate, inflation, exchange rate, and total consumption are variables. These factors have a high level of effectiveness and low dependence on other variables. Due to their great influence, the variables in the first quadrant require special scrutiny and policymaking attention from the government.

In quadrant II, there is a regional tourism variable and GRDP, which is a relay variable or highly influential and interdependent. In a policy, relay variables can propagate throughout the system; if this variable changes, it will also influence other variables. These include inventory turnover, working capital, individualism, debt ratio, unemployment, interest rates, production volume, the expected purchase price of raw materials, and storage costs in quadrant III. These variables have a low level of influence and reliance. There are PAD factors, panic buying, work culture, social restraints (PS), isolation, money, the durability of raw materials, job productivity, changes in attitudes and behavior, communication patterns, and professionalism in quadrant IV. These variables have a negligible effect on the system and a high degree of dependence on other factors. These include inventory turnover, working capital, individualism, debt ratio, unemployment, interest rates, production volume, the expected purchase price of raw materials, and storage costs in quadrant III. These variables have a low level of influence and reliance. There are PAD factors, panic buying, work culture, social restraints (PS), isolation, money, the durability of raw materials, job productivity, changes in attitudes and behavior, communication patterns, and professionalism in quadrant IV. These variables have a negligible effect on the system and a high degree of dependence on other factors.

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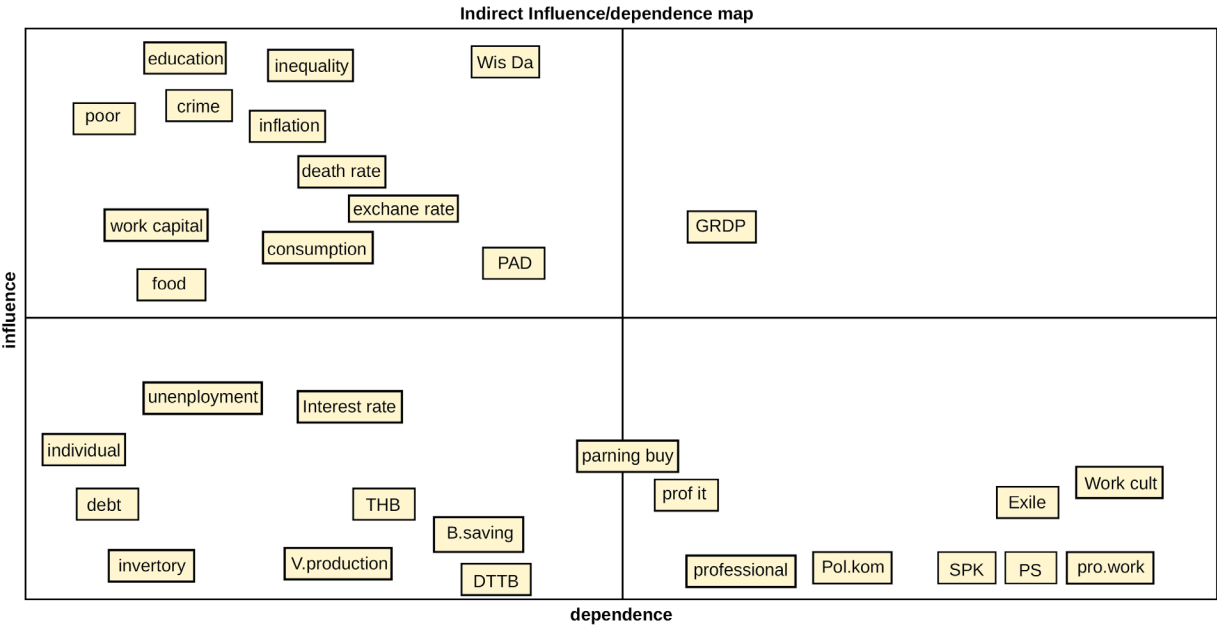
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Fig. 2. Result in Map *Matrix of Indirect Influence/Dependence*
Note: Based on MIMAC Data Processing (2022)

Based on the image above, the MII quadrant I map consists of twelve variables with indirect effects and slight dependencies with other factors. These variables include the rate of poverty, working capital, level of education, crime rate, total food production, inflation, income inequality, mortality rate, exchange rate, total consumption, regional tourism, and PAD. This quadrant requires special consideration while determining the viability and evaluating the current policy framework. In quadrant II, there is a GRDP variable that is a relay variable or influential and indirectly dependent on other factors. Individualism, debt ratios, inventory turnover, unemployment, interest rates, the level of the purchase price of raw materials (THB), production volume, storage costs, the purchasing power of

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raw materials (DTBB), and panic buying are some variables in quadrant III. This variable is extremely sensitive, but its effect is minimally indirect and dependent on other variables.

In the fourth quadrant are income (profit) variables, professionalism, communication patterns, attitude and behavior changes, social restrictions, work productivity, isolation, and work culture. This quadrant indicates that these variables have almost no indirect influence and a great deal of direct influence. If this variable is omitted in the future, it will not significantly impact the policy. This variable is extremely sensitive, but its effect is minimally indirect and dependent on other variables. In the fourth quadrant are income (profit) variables, professionalism, communication patterns, attitude and behavior changes, social restrictions, work productivity, isolation, and work culture. This quadrant indicates that these variables have almost no indirect influence and a great deal of direct influence. If this variable is omitted in the future, it

will not significantly impact the policy. This variable is extremely sensitive, but its effect is minimally indirect and dependent on other variables.

In the fourth quadrant are income (profit) variables, professionalism, communication patterns, attitude and behavior changes, social restrictions, work productivity, isolation, and work culture. This quadrant indicates that these variables have essentially no indirect influence and a great deal of direct influence. If this variable is omitted in the future, it will not substantially impact the policy, isolation, or workplace culture. This quadrant indicates that these variables have essentially no indirect influence and a great deal of direct influence. If this variable is omitted in the future, it will not substantially impact the policy, isolation, or workplace culture. This quadrant indicates that these variables have essentially no indirect influence and a great deal of direct influence. If this variable is omitted in the future, it will not substantially impact the policy.
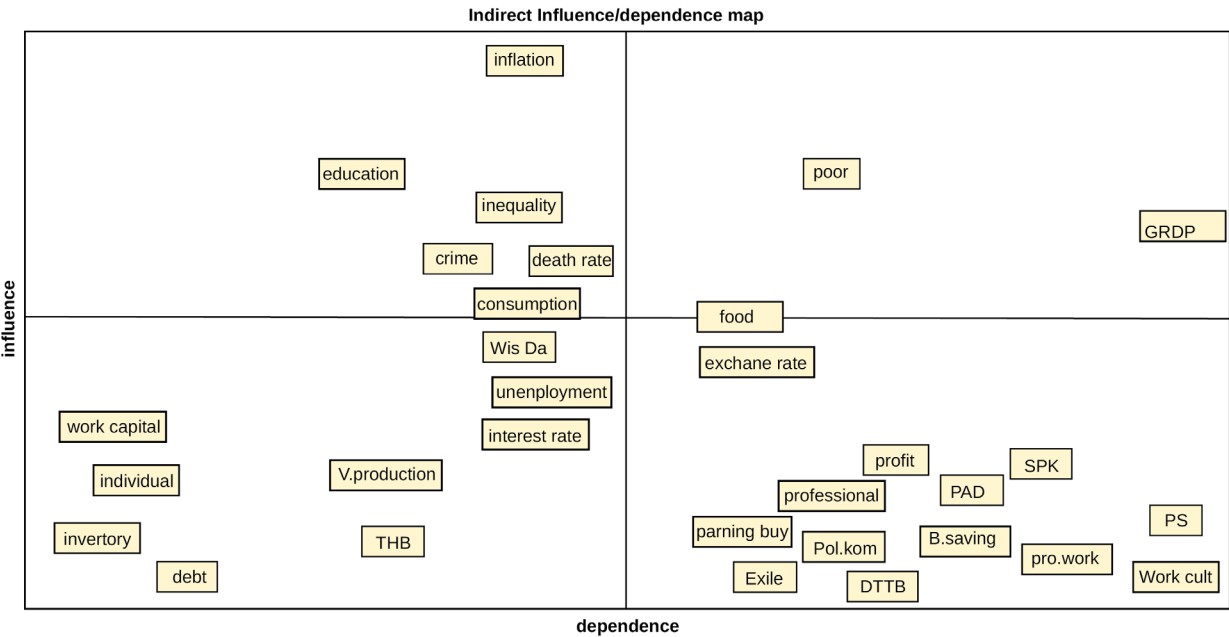

Fig. 3. Matrix Result Map Potential of Direct Influence/Dependence
Note: Based on MIMAC Data Processing (2022)

Directly depicted in the image above is a map of the potential impact. In quadrant, I of the MPDI map, six variables, including inflation, education level, income disparity, crime rate, and death rate, have a direct potential influence. In quadrant II, two variables, poverty level, and GRDP, have a strong potential influence and

dependence. In quadrant III, nine factors, including working capital, individualism, inventory turnover, debt ratio, production volume, Estimated Purchase Price of Raw Materials (THB), regional tourism, unemployment, and ethnicity flower, have a modest level of effect and weak reliance.

5. Discussion

Covid-19 will disrupt international commerce networks and financial flows, local capital productivity due to closing industries and people remaining at home, tourist and transportation income due to demand factors, and export income due to dropping commodity prices. In the economy of impoverished households, national

economic growth in 2020 is projected to decrease to 2.3% and, in the worst-case scenario, to -0.4%. In addition, the Minister of Finance of the Republic of Indonesia indicated that the afflicted economic sector in January was Tourism. It has now (April) spread to the manufacturing industry and subsequently to small businesses (Budastra, 2020).
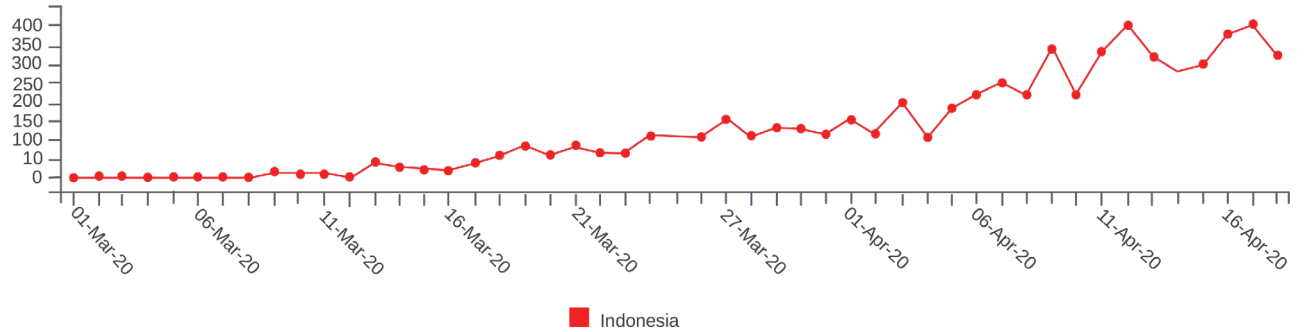

Fig. 4. Daily Case of Covid-19 in Indonesia Until April 18, 2020
Note: Based on the Ministry of Health of the Republic of Indonesia.

On Monday, March 2, 2020, the first positive case of the coronavirus or Covid-19 was found in Indonesia, as declared by President Joko Widodo. Since then, the number of confirmed cases of Corona has increased daily. In Indonesia, the number of Covid-19-positive cases has climbed again. As of April 30 data obtained at 12:00 WIB, there were 347 positive cases of Corona,

increasing the overall number of coronavirus-positive cases to 10,118. The recovered patients also continued to climb by 131, bringing the total number of recovered patients to 1,522, while the number of patients who passed away decreased by 8, bringing the total to 792 (Idhom, 2020).

Fig. 5. The spread of Covid-19 in the JABODETABEK area in 2021
Note: Based on Diskominfo DKI Jakarta (2021)

In Indonesia, West Jakarta, East Jakarta, Central Jakarta, and North Jakarta make up the DKI Jakarta

area, which has been designated as a Red Zone. The "red zone" designation was given to regions

with uncontrolled transmission rates. Many daily activities began to cease in this region. In addition to the cessation of teaching and learning, commercial activity, and even congregational worship, travel restrictions have also been implemented. This resulted in a sluggish economy in Jakarta, despite everyone knowing that Jakarta is the capital of Indonesia and a city with a huge economic turnover. Many economic activities were temporarily halted, even though Jakarta is not only populated by its native people but also by a large number of immigrants who stay or work as immigrants.
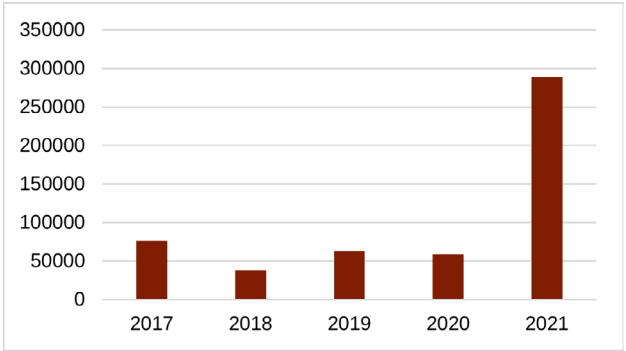

Fig. 6. Number of MSMEs in DKI Jakarta in 2017-2021
Note: Based on Katadata (2022)

According to this graph, the number of MSMEs in Jakarta will have increased dramatically in 2022. This is because the MSME tax is abolished, which can encourage MSME actors to expand their business

Table 6. Outstanding Of Micro, Small, And Medium Enterprises Credits Of Commercial Banks (MSMEs) (Billions of Rp)

*Information	2016	2017	2018	2019	2020	2021	2022	ITEMS
Scale enterprises	856,957	942,387	1,032,643	1,111,340	1,096,853	1,223,433	1,299,356	Business Criteria
Micro	195.621	221.408	251,336	283.704	284,043	389,895	446,639	Micro
Small	259.504	282,774	312,069	343.792	340.792	459,744	481,843	Small
Intermediate	405.832	438,204	469,237	483.844	483.844	373,794	370,873	Medium
Notes : SME DKI Jakarta								

The preceding table demonstrates that in 2020, the Credit Position of Micro, Small, and Medium Commercial Banks fell for micro and small enterprises, but it remained stable for medium-sized businesses. Comparing the second quarter of 2020 to the previous quarter, the credit performance of Micro, Small, and Medium-Sized Businesses (MSMEs) fell due to the general increase in credit in DKI Jakarta Province. Based on business size, loans to medium-sized enterprises dominate

wings. The covid-19 pandemic makes people shop online because they are afraid to leave their homes, new MSME actors are present around the household and make it easier for each other to meet their daily needs, and many factory workers have been laid off. On Saturday, July 11, 2020, the provincial administration of DKI Jakarta will update the number of coronavirus cases in DKI Jakarta. Pemprov DKI Jakarta publishes the information on the official website of the void-19 information and coordination center. It was found that 13,957 people in the DKI Jakarta region were infected with the coronavirus. Even though the government has adopted PSBB, the number of COVID-19 instances continues to rise. PSBB laws enacted by the government cause the economic sector to be sluggish and incur losses at the national, sectoral, and corporate levels.

The state incurs 'losses' due to a decline in income, particularly from taxes, and a rise in expenditures as a result of having to deal with emergencies, providing social safety nets, dealing with sick people, deploying additional health personnel and personnel, paying interest on new debts, etc. However, these losses will be compensated in the future. The state will break even on the future (tax and non-tax) income or not lose money unless there is asset leakage, theft, or corruption during implementation. In addition to the losses that might be computed above, non-business variables can also result in additional potential losses. For instance, economic troubles have led to increased criminal activity and corporate property destruction (Budastra, 2020).

MSME loans in DKI Jakarta Province. Micro, small, and medium business loans decreased in the second quarter of 2020 by -9.29% (YoY), -4.16% (YoY), and -2.88% (YoY), respectively (YoY).

In general, MSME actors in the DKI Jakarta area only use the area for transactions. Their processing and business locations are primarily in the capital's buffer zones, such as Bogor, Tangerang, Bekasi, and

Depok. This is due to the high land cost and the size of DKI Jakarta as a commercial hub. Therefore the expansion of MSME loans based on project sites tends to be constrained. The Credit Position of Commercial Banks for Micro, Small, and Medium-Sized Businesses is projected to expand by 2021, but only for medium-sized businesses. Moreover, in 2022, when viewed based on final data, namely in June, there is likely to be an increase in all MSME business sizes. This cannot be separated from the banking sector's efforts in increasing the offer of various loans for MSMEs, including increasing the class of existing customers through education and mentoring programs and targeting a smaller segment, namely ultra-micro, as new growth.

Let's examine the direct and indirect effects of potential variables experiencing economic losses by sector and MSMEs. It is evident from the results of the MDI and MII mapping, namely inequality, education, crime, death cases, poverty, inflation, exchange rates, consumption, and quantity of food, and if we analyze using an indirect map, then there are additional key variables indirectly experiencing losses, namely regional tourism, Regional Original Income, and Worst Case Scenarios. With this information, we can conclude that social and economic inequality is worsening, the quality of education has declined due to technology making it difficult for children to comprehend lessons and concentrate, crime rates are high, and cases of poverty are increasing due to the termination of employment. Employment relations will affect the state of the economy, sectoral conditions, such as unstable inflation, decreased food consumption due to the need to save money in the face of a pandemic, and reduced indirect demand for regional tourism objects will reduce Regional Original Income. As for the MSME component, working capital is severely hampered, profits decline, and inventory supplies can no longer be conditioned due to the tax object's inability to pay taxes.

6. Conclusions
This analysis reveals that among 31 sectoral identification factors and MSME components, those in quadrant 1 have the highest direct impact on loss. The major variables in this study are grouped into four quadrants. In quadrant I of the MDI map, poverty, crime, food production, income inequality, education level, mortality rate, inflation, exchange rate, and total consumption are variables. These factors have a high level of influence with low dependence on other variables; due to their strong influence, the government must pay special

attention to the variables in the first quadrant during evaluation and policymaking. In quadrant II, there is a regional tourism variable and the GRDP, which is a relay variable or very important dependent on other variables. In a policy, relay variables can propagate throughout the system; if this variable changes, it will also influence other variables. These include inventory turnover, working capital, individualism, debt ratio, unemployment, interest rates, production volume, the expected purchase price of raw materials, and storage costs in quadrant III. These variables have a low level of influence and reliance. There are PAD factors, panic buying, work culture, social restraints (PS), isolation, money, the durability of raw materials, job productivity, changes in attitudes and behavior, communication patterns, and professionalism in quadrant IV. These variables have a negligible effect on the system and a high degree of dependence on other factors.

Twelve variables in Quadrant I of the MII map indirectly influence and depend on other factors. These variables include poverty rate, working capital, education level, crime rate, food production, inflation, income inequality, mortality rate, exchange rate, total consumption, regional tourism, and PAD. The characteristics in this quadrant require special consideration when determining the viability and assessing the current policy framework. In quadrant II, there is a GRDP variable that is a relay variable or influential and indirectly dependent on other factors. Individualism, debt ratios, inventory turnover, unemployment, interest rates, the level of the purchase price of raw materials (THB), production volume, storage costs, the purchasing power of raw materials (DTBB), and panic buying are among the variables in quadrant III. This variable is highly sensitive, although its indirect impact is minimal and dependent on other variables. In the fourth quadrant are money (profit) variables, professionalism, communication patterns, attitude and behavior changes, social limitations, job productivity, isolation, and work culture. This quadrant indicates that these variables have essentially no indirect influence and a great deal of direct influence. If this variable is omitted in the future, it will not substantially impact the policy.

References
Alm, J., Blaufus, K., Fochmann, M., Kirchler, E., Mohr, P., Olson, N. E., & Torgler, B. (2020). Tax policy measures to combat the sars-cov-2 pandemic and considerations to improve tax compliance: a behavioral perspective. In *WU International Taxation Research Paper Series* (pp. 1-39). https://doi.org/10.2139/ssrn.3692370

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Ariyani, N., & Fauzi, A. (2019). Analisis tipologi variabel strategis pada pengembangan kawasan ekowisata Kedung Ombo. *Jurnal Wilayah dan Lingkungan, 7*(3), 196-207. http://dx.doi.org/10.14710/jwl.7.3.196-207

Benjumea-Arias, M., Castañeda, L., & Valencia-Arias, A. (2016). Structural analysis of strategic variables through micmac use: Case study. *Mediterranean Journal of social sciences, 7*(4), 11-19. http://doi.org/10.5901/mjss.2016.v7n4p11

Budastra, I. K. (2020). Dampak sosial ekonomi covid-19 dan program potensial untuk penanganannya: studi kasus di kabupaten lombok barat. *Jurnal Agrimansion, 21*(1), 48-57. https://doi.org/10.29303/agrimansion.v21i1.321

Cahigas, M. M. L., Prasetyo, Y. T., Alexander, J., Sutapa, P. L., Wiratama, S., Arvin, V., Nadlifatin, R., & Persada, S. F. (2022). Factors affecting visiting behavior to Bali during the covid-19 pandemic: An extended theory of planned behavior approach. *Sustainability, 14*(16), 10424. https://doi.org/10.3390/su141610424

Cascella, M., Rajnik, M., Aleem, A., Dulebohn, S., & Di Napoli, R. (2023). Features, Evaluation, and Treatment of Coronavirus (COVID-19). *StatPearls.* https://europepmc.org/article/NBK/nbk554776

Chaturvedi, K., Vishwakarma, D. K., & Singh, N. (2021). COVID-19 and its impact on education, social life and mental health of students: A survey. *Children and youth services review, 121*, 105866. https://doi.org/10.1016/j.childyouth.2020.105866

Cirera, X., Cruz, M., Davies, E., Grover, A., Iacovone, L., Cordova, J. E. L., Medvedev, D., Maduko, F. O., Nayyar, G., & Reyes Ortega, S. (2021). Policies to support businesses through the COVID-19 shock: A firm level perspective. *The World Bank Research Observer, 36*(1), 41-66. https://doi.org/10.1093/wbro/lkab001

Creswell, J. W. (2014). *A concise introduction to mixed methods research.* SAGE Publications.

da Costa, V. G., Saivish, M. V., Santos, D. E. R., de Lima Silva, R. F., & Moreli, M. L. (2020). Comparative epidemiology between the 2009 H1N1 influenza and COVID-19 pandemics. *Journal of Infection and Public Health, 13*(12), 1797-1804. https://doi.org/10.1016/j.jiph.2020.09.023

Demicheli, V., Jefferson, T., Di Pietrantonj, C., Ferroni, E., Thorning, S., Thomas, R. E., & Rivetti, A. (2018). Vaccines for preventing influenza in the elderly. *Cochrane Database of Systematic Reviews, (2)*, 1-193. https://doi.org/10.1002/14651858.CD004876.pub4

Elfil, M., & Negida, A. (2017). Sampling methods in clinical research; an educational review. *Emergency, 5*(1), e52. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5325924/

Elkhatib, W. F., Abdelkareem, S. S., Khalaf, W. S., Shahin, M. I., Elfadil, D., Alhazmi, A., El-Batal, A. I., & El-Sayyad, G. S. (2022). Narrative review on century of respiratory pandemics from Spanish flu to COVID-19 and impact of nanotechnology on COVID-19 diagnosis and immune system boosting. *Virology journal, 19*(1), 1-35. https://doi.org/10.1186/s12985-022-01902-2

Fauzi, A. (2019). *Teknik analisis keberlanjutan.* Gramedia Pustaka Utama.

García-Pérez-de-Lema, D., Madrid-Guijarro, A., & Durendez, A. (2022). Operating, financial and investment impacts of Covid-19 in SMEs: Public policy demands to sustainable recovery considering the economic sector moderating effect. *International Journal of Disaster Risk Reduction, 75*, 102951. https://doi.org/10.1016/j.ijdrr.2022.102951

Hartmann, A. J., Gangl, K., Kasper, M., Kirchler, E., Kocher, M. G., Mueller, M., & Sonntag, A. (2022). The economic crisis during the COVID-19 pandemic has a negative effect on tax compliance: Results from a scenario study in Austria. *Journal of Economic Psychology, 93*, 102572. https://doi.org/10.1016/j.joep.2022.102572

Hoque, M. N., Akter, S., Mishu, I. D., Islam, M. R., Rahman, M. S., Akhter, M., Islam, I., Hasan, M. M., Rahaman, M. M., & Sultana, M. (2021). Microbial co-infections in COVID-19: Associated microbiota and underlying mechanisms of pathogenesis. *Microbial pathogenesis, 156*, 104941. https://doi.org/10.1016/j.micpath.2021.104941

How-To Guide. (2016). *Focus Group Discussion.* A HERD Publication. https://www.herd.org.np/uploads/frontend/Publications/PublicationsAttachments1/1485497050-Focus%20Group%20Discussion_0.pdf

Idhom, A. M. (2020). *Update Corona 13 April 2020 Indonesia & Dunia: Info Data Hari Ini.* tirto.id. https://tirto.id/update-corona-13-april-2020-indonesia-dunia-info-data-hari-ini-eMXC

Inegbedion, H. (2021). Impact of COVID-19 on economic growth in Nigeria: opinions and attitudes. *Heliyon, 7*(5), e06943. https://doi.org/10.1016/j.heliyon.2021.e06943

Jassim, J., & Khawar, M. (2018). Defining micro, very small & small enterprises: Moving towards a standard definition-continuum. *Pakistan Microfinance Network, (34)*, 1-31. https://www.pmn.org.pk/publications/Defining%20Micro,%20Very%20Small%20&%20Small%20Enterprises.pdf

Kaler, J., Hussain, A., Patel, K., Hernandez, T., & Ray, S. (2023). Respiratory Syncytial Virus: A Comprehensive Review of Transmission, Pathophysiology, and Manifestation. *Cureus, 15*(3). https://doi.org/10.7759/cureus.36342

Karpoff, J. M. (2021). The future of financial fraud. *Journal of Corporate Finance, 66*, 101694. https://doi.org/10.1016/j.jcorpfin.2020.101694

Koerniawan, I., Samiha, Y. T., Fatimah, C. E. A., Terminanto, A., & Irviani, R. (2020). Understanding Micro Small Medium Enterprise in Indonesia. *European Journal of Molecular & Clinical Medicine, 7*(02), 1191-1203. https://ejmcm.com/article_2329_e4e7a3170994bf408d82ada8df2a8429.pdf

Kurniawati, E., & Setiawan, A. (2019). The Role of Indonesian Micro, Small, and Medium Enterprises Owners in Choosing e-Commerce Strategy in the Global Market. In *1st International Conference on Social Knowledge Sciences and Education (ICSKSE 2018)* (pp. 191-194). Atlantis Press. https://doi.org/10.2991/icskse-18.2019.37

Nugraha, B., Wahyuni, L. K., Laswati, H., Kusumastuti, P., Tulaar, A. B., & Gutenbrunner, C. (2020). COVID-19 pandemic in Indonesia: Situation and challenges of rehabilitation medicine in Indonesia. *Acta Medica Indonesiana, 52*(3), 299-305. https://www.researchgate.net/publication/344470300

Pedraza, J. M. (2021). The micro, small, and medium-sized enterprises and its role in the economic development of a country. *Business and Management Research, 10*(1), 33. https://doi.org/10.5430/bmr.v10n1p33

Pedrosa, A. L., Bitencourt, L., Fróes, A. C. F., Cazumbá, M. L. B., Campos, R. G. B., de Brito, S. B. C. S., & Simões e Silva, A. C. (2020). Emotional, behavioral, and psychological impact of the COVID-19 pandemic. *Frontiers in psychology, 11*, 566212. https://doi.org/10.3389/fpsyg.2020.566212

Rahmawati, R. (2020). *Regulasi diri dalam belajar dan stres akademik pada mahasiswa.* Universitas Islam Indonesia. http://dspace.uii.ac.id/123456789/24115

Shinozaki, S., & Rao, L. N. (2021). COVID-19 Impact on Micro, Small, and Medium-Sized Enterprises under the Lockdown: Evidence from a Rapid Survey in the Philippines. *Preprint from SSRN.* https://doi.org/10.2139/ssrn.3807080

Sukwika, T. (2016). *Evaluasi model kebijakan pengelolaan hutan rakyat berkelanjutan di Kabupaten Bogor.* (Doctoral dissertation). IPB (Bogor Agricultural University).

Supari, S., & Anton, H. (2022). The Impact of the National Economic Recovery Program and Digitalization on MSME Resilience during the COVID-19 Pandemic: A Case Study of Bank Rakyat Indonesia. *Economies, 10*(7), 160. https://doi.org/10.3390/economies10070160

Supriyanto, S. (2006). Pemberdayaan usaha mikro, kecil dan menengah (UMKM) sebagai salah satu upaya penanggulangan kemiskinan. *Jurnal Ekonomi dan Pendidikan, 3*(1), 17247. https://doi.org/10.21831/jep.v3i1.627

Takeda, A., Truong, H. T., & Sonobe, T. (2022). The impacts of the COVID-19 pandemic on micro, small, and medium enterprises in Asia and their digitalization responses. *Journal of Asian Economics, 82*, 101533. https://doi.org/10.1016/j.asieco.2022.101533

Wahidmurni, W. (2017). *Metodologi pembelajaran IPS: pengembangan standar proses pembelajaran IPS di sekolah/madrasah.* Ar-Ruzz Media, Yogyakarta. http://repository.uin-malang.ac.id/4634