

AN EVALUATION OF THE COVID-19 NATIONAL ECONOMIC RECOVERY PROGRAM: EVIDENCE FROM MSMEs' PERFORMANCE IN WEST JAVA, INDONESIA

Agnes Ridla Apriliana¹, Ahmad Aswin Masudi

Center for Economic Studies, Faculty of Economics, Parahyangan Catholic University
Jalan Ciembuluit No. 94, Hegarmanah, Bandung 40141, Indonesia

Article history:

Received
23 August 2024

Revised
25 January 2025

Accepted
8 February 2025

Available online
31 May 2025

This is an open access
article under the CC
BY license (<https://creativecommons.org/licenses/by/4.0/>)



ABSTRACT

Background: Micro, Small, and Medium Enterprises (MSMEs) maintain their performance through internal factors, like their characteristics as MSMEs, and external factors, such as government policy. The National Economic Recovery Program (PEN) was expected to improve the performance of MSMEs, especially during the pandemic.

Purpose: This study aims to evaluate the impact of PEN (credit restructuring, digitalization, and training) and MSMEs' characteristics (form of business, gender, level of education, type of MSMEs, marketing area) on MSMEs' performance measured by total asset turnover.

Design/methodology/approach: The data from a survey conducted by Cooperation and MSMEs Dinas Koperasi dan UMKM, West Java Province, between 2020 and 2021. This survey focuses on 8,469 comprehensive and compliant MSME data points out of 9,046 using the logistic model.

Finding/Result: The results show MSMEs who participate in PEN have a higher log odds ratio of total asset turnover above the average than those who do not. The form of business, gender, and marketing area positively affect the log odds ratio of total asset turnover above the average. Vocational education leads to the highest asset turnover, followed by diplomas, universities, and high schools. Service and Industry SMEs outperform other sectors, followed by Convection and Fashion, Food and Beverage, and Craft and Accessories.

Conclusion: MSMEs involved in the PEN program are more likely to achieve higher asset turnover, with business form, gender, education, and marketing area significantly influencing performance.

Originality/value (State of the art): This study uniquely links MSME characteristics with the government recovery program, providing a fresh evaluation of how policy interventions and internal drive MSME performance during the pandemic.

Keywords: MSMEs, PEN, The National Economic Recovery Program, West Java, COVID-19

How to Cite:

Apriliana A. R., & Masudi A. A. (2025). An Evaluation of the Covid-19 National Economic Recovery Program: Evidence From MSMEs' Performance in West Java, Indonesia. Indonesian Journal of Business and Entrepreneurship (IJBE), 11(2), 382. <https://doi.org/10.17358/ijbe.11.2.382>

¹ Corresponding author:

Email: agnes.apriliana@unpar.ac.id

INTRODUCTION

The COVID-19 pandemic has changed life patterns worldwide and weakened economic growth, so many countries have fallen into recession. Indonesia's economic growth began to slow down in the second quarter of 2020 (Bank Indonesia, 2020) as efforts to reduce the transmission of COVID-19, such as regional quarantine to large-scale social restrictions (PSBB), took priority so that many businesses had to stop, leading to a slowdown in the national economy. These economic conditions result in low purchasing power and weak consumer confidence. Micro, Small, and Medium Enterprises (MSMEs) are among those most affected by the COVID-19 pandemic.

MSMEs in Indonesia have a significant role in absorbing the workforce, with micro and small businesses accounting for 74.63% or 8.5 million workers, while in West Java, medium and large enterprises employ 25.37% of the workforce or 2.9 million people. The micro business sector accounts for 85.02% of all MSMEs, followed by small enterprises (13.60%) and medium to large firms (1.38%) (Badan Pusat Statistik (BPS) Jawa Barat, 2023). In addition, as the Ministry of Cooperatives reported, MSMEs can contribute 60% of West Java's GRDP, exports of 14.17%, and domestic investment of 58.18%. This means that many parties are impacted here, starting from entrepreneurial beginners with small and micro businesses, which can

then move into medium and large businesses. This situation is crucial because they play an important role from the supply or demand side, ultimately leading to the multiplier effect.

Based on the West Java Regional Financial Access Acceleration Team (TPAKD) Creative Economy Division report 2020 (Figure 1), the total number of MSMEs affected by the pandemic reached 58,263 (TPAKD, 2020). The most significant number of MSMEs affected by the pandemic was in the Ciamis Regency area, amounting to 9,190. In comparison, the number of small MSMEs affected by the pandemic in the Sumedang Regency area was only 39.

The resilience of MSMEs needs to be strengthened to make them survive when shocks occur. MSME resilience is the condition in which business actors can maintain or adapt through their resources or new patterns for carrying out their operations. There are internal and external factors that can build resilience for MSMEs. Internal factors include business characteristics, namely business management, capital, location, business scale, owner's education, gender, and others. Meanwhile, external factors include disruption of business patterns from traditional to modern and government programs or the private sector, which are means to protect and recover from downturns (Supari & Anton, 2022).



Figure 1. Recapitulation of Data on MSMEs Affected by COVID-19 (TPAKD, 2020)

One of the government programs aimed to strengthen these two MSME factors was the National Economic Recovery Program (PEN). This program had six central policies issued by the government to respond to the impact of COVID-19 at the household to corporate levels. These policies include health care, social protection, business world incentives, MSMEs support, corporate financing, and sectoral programs for Ministries, Institutions, and Regional Governments. The PEN-MSME Support Policy had three main focuses, namely financing (relaxation in installment and credit interest payments, interest subsidies, and credit restructuring), training and coaching MSMEs regarding financial inclusion and digital ecosystems by the Regional Financial Access Acceleration Team (TPAKD) and the National Movement Proudly Made in Indonesia (Gernas BBI), as well as marketing MSMEs with a digital ecosystem (Ministry of Finance, 2020). The presence of the PEN-MSME Support Policy during the pandemic was hoped to bring MSME actors to digital transformation for inclusive growth.

In order to gain the resilience of MSMEs, the West Java government has a program that focuses on accelerating the influence of the PEN-MSME Support Policy, namely the West Java MSME Champion program. This program targets the participation of 6,000 MSMEs, and based on microdata received by the author from the Department of Cooperatives and MSMEs, the West Java government was able to invite as many as 9,000 MSMEs. The West Java Government facilitates MSMEs to obtain Credit Restructuring loan guarantees, get interest according to the MSME bank customers, and receive training or coaching to understand financial inclusion and digitalization on the marketing side. On the other hand, the characteristics of MSMEs, such as education level, business form, business category, and marketing area, greatly determine whether MSMEs receiving this assistance would perform better. If the quality characteristics of MSMEs are weak and vulnerable, MSMEs tend to find it challenging to adapt, and various problems arise. Many MSMEs also found it challenging to channel capital, leading to sales values falling.

The government issued the PEN Policy-MSME Support to overcome these problems regarding the characteristics of MSMEs, capital, and marketing. Strengthening the characteristics of MSMEs was channeled through training and mentoring, including financial inclusion and the digital MSME ecosystem.

At the same time, on the capital side, the government provided concessions in installment and credit interest payments, interest subsidies, and credit restructuring. It is hoped that the presence of the PEN Policy, along with MSMEs' characteristics, could improve their performance during the pandemic. Apart from that, the success of the PEN Policy would be visible when compared with data on MSMEs that did not receive government assistance. With the success of the government's target of collecting MSMEs facilitated through the West Java UMKM Champion program, it is interesting to research whether the target for increasing the performance of MSMEs was achieved through the facilities provided.

The novelty of this research lies in the use of comprehensive and specific microdata, namely a survey from the Cooperatives and MSMEs Agency, which included 8,469 respondents. This data provides superiority in terms of validity and reliability because it reflects the real conditions of MSMEs in West Java with a large and representative sample. This allows for a more in-depth and accurate analysis of the dynamics of MSMEs and facilitates the development of more targeted and effective policies. Using this rich primary data also increases the potential to discover new insights not revealed in previous studies, thus significantly contributing to regional economic literature and local economic development practice. MSMEs, whether micro, small, or medium-sized, generally have the same problems. The government program, PEN UMKM, is expected to be a stepping stone to increasing the productivity of MSMEs.

So, in this research, the author aims to see the impact of the UMKM PEN Policy on the performance of MSMEs during the pandemic and to see the influence of MSME characteristics on the performance of MSMEs during the pandemic.

METHODS

This research uses microdata from the West Java Provincial Cooperative and MSMEs Survey Agency, namely a set of MSME data gathered between 2020 and 2021. This survey is a provincial-scale economic survey conducted by the West Java Government to monitor the performance and resilience of MSMEs. This research, which is carried out once a year, gathers detailed information about MSME characteristics,

financial situation, and involvement in government aid initiatives.

The number of MSMEs surveyed in 2020 to 2021 was 9046, but this research used 8469 MSMEs data that were comprehensive and compliant with the research used in this study. However, there are still a few generalizations to MSMEs outside of West Java due to data availability. Considering that the purpose of this research is to examine the effects of the digitalization and financial assistance program on MSMEs' performance, the data collection used only focuses on MSMEs in West Java that are participating in the National Economic Recovery Program (PEN).

These MSMEs participated in the West Java MSME Champion provincial government program. MSMEs that took part in the West Java Champion Program have various characteristics, which are reviewed based on 1) Credit Restructuring, 2) Digitalization, 3)

Getting training and coaching, 4) Form of Business, 5) Gender, 6) Education Level, 7) Type of MSME, and 8) Marketing Area. In contrast, the independent variables studied are credit restructuring, digitalization, training and development, business form, gender, education level, type of MSMEs, and marketing area. The dependent variable that will be studied is the performance of MSMEs. There are various ways to assess business performance, two of which are profitability ratios and sales value. Based on research by Bhavis et al. (2017), Profitability ratio occurs when a company's ability to generate profit within a certain period, such as Return on Assets (ROA) and Return on Equity (ROE). However, to measure sale value, use Total Asset Turnover. Based on research by Zulfikar et al. (2017), total asset turnover as a measure of profit growth in a company also serves as a predictor of future profit growth. Each type of data will be described in detail, and the relevance of the data in the context of the research being conducted at Table 1

Table 1. Description of Data

Data	Information
MSMEs Performance	The performance of MSMEs used in this research is total asset turnover per year (2020-2021). If written mathematically, it becomes: (Gitman & Zutter, 2015)
	$\text{Total Asset Turnover} = \text{Sales} / \text{Total Assets}$
Credit Restructuring	Credit restructuring is one of the government's assistance efforts through the PEN Program to help fund MSMEs
Digitalization	Through the PEN Program, MSMEs are encouraged to use the developing digitalization. Digitalization also helps MSMEs to run their businesses amidst the pandemic. Digitalization in question includes the use of social media and e-commerce.
Training & Coaching	Training & Coaching is a facility provided by the government in the PEN Program. This facility is also provided so that MSMEs are able to compete in running their businesses amidst the pandemic. The government also provides this facility for MSMEs so they can understand financial inclusion, production processes, and marketing.
Form of Business	MSMEs can be individuals, CVs, or PTs. Individual MSMEs are a form of non-formal business, while CVs or PTs are a form of formal business. In this research, the business form is divided into individual and CV/PT.
Gender	The genders used by the author are female and male based on the ownership of MSMEs in the West Java Champion program.
High School	The education level referred to is High School in West Java Province.
Vocational School	The education level referred to is Vocational High School in West Java Province.
Associate Degree	The education level in question is a vocational school from D1-D4 in West Java Province.
University	The education level referred to is tertiary education from the S1-S3 level in West Java Province.
Food & Beverage	Type of food and beverage business
Convection & Fashion	Convection & Fashion business type
Craft & Accessories	Craft & Accessories business type
Services & Industry	Services & Industry type
Marketing Area	In this research, the marketing area is divided into the West Java marketing area and the marketing area outside West Java (national). The marketing area is the area where MSMEs market their products (goods or services) or meet with potential consumers.

This research employs a logistic model processed with SPSS to achieve the research objectives. The logit model is a non-linear regression model based on the categorical equation of the dependent variable (Y_i). In this study, Y_i will take the value of 1 if the total asset turnover is above average, and 0 if it is below average. Following Gujarati (2003), the probability of above-average total asset turnover would be $\Pr(Y_k = 1) = P_k$. Then, the probability of below-average total asset turnover would be $\Pr(Y_k = 0) = 1 - P_k$, as summarized in Table 1.

Table 1. Logit Model Probability

Y_i	Probability
0	$1 - P_i$
1	P_i

Source: Gujarati, 2003

If P_i follows the Logistic distribution, then it can be specified as:

$$P_i = F(Z_i) = \frac{1}{1 + e^{-Z_i}}$$

While $1 - P_i$ can be written as:

$$1 - P_i = 1 - \frac{1}{1 + e^{-Z_i}} = \frac{e^{-Z_i}}{1 + e^{-Z_i}}$$

The expected value of Y :

$$E(Y) = (1)(P_i) + (0)(1 - P_i) = P_i = \frac{1}{1 + e^{-Z_i}}$$

Hence, the odds ratio between the two probabilities:

$$\frac{P_i}{1 - P_i} = \frac{\frac{1}{1 + e^{-Z_i}}}{\frac{e^{-Z_i}}{1 + e^{-Z_i}}} = \frac{1}{1 + e^{-Z_i}} \cdot \frac{1 + e^{-Z_i}}{e^{-Z_i}} = e^{Z_i}$$

If $Y_i = \beta_0 + \beta_1 X$, then taking the log on both sides yields:

$$\ln\left(\frac{P_i}{1 - P_i}\right) = Z_i = \beta_0 + \beta_1 X_i$$

Thus, the log odds ratio is now linear. The estimation equation and variables used are as follows:

$$\ln(P_i/(1 - P_i)) = \beta_0 + \beta_1 CR_i + \beta_2 Dig_i + \beta_3 TC_i + \beta_4 FormB_i + \beta_5 Gender_i + \beta_6 HS_i + \beta_7 VS_i + \beta_8 AD_i + \beta_9 Univ_i + \beta_{10} F\&B_i + \beta_{11} CF_i + \beta_{12} CA_i + \beta_{13} SI_i + \beta_{14} Area_i + \varepsilon_i$$

Based on the challenges faced by MSMEs during the COVID-19 pandemic and the government's efforts to support them through the National Economic Recovery Program (PEN), the following hypotheses are proposed:

Hypothesis 1: The National Economic Recovery Program (PEN) positively impacts the performance of MSMEs during the COVID-19 pandemic

Hypothesis 2: MSMEs' characteristics, such as business form, education, type of business, and marketing area, influence MSME performance during the COVID-19 pandemic.

To recover the productivity of MSMEs during the pandemic, the PEN-UMKM policy from the government was implemented, focusing on three main areas: financing, capacity building, and marketing digitalization. Financing includes credit restructuring, such as interest rate reduction and term extensions, easing the burden on MSMEs in repaying loans. Capacity building involves training by TPAKD and Gernas BBI, emphasizing financial literacy and adapting to the digital ecosystem. Marketing digitalization helps MSMEs reach wider markets through e-commerce and digital platforms. MSME characteristics such as business form, education level, gender, business type, and marketing area, influence their ability to survive during the pandemic. Digitalization has proven effective in expanding markets and supporting businesses' sustainability. Research framework in Figure 1.

RESULTS

The MSMEs' performance that will be focused on in this study is determined by Total Asset Turnover (TAT). Out of 8,469 MSMEs (72.38%) had TATs below average, while 27.62% of them had TATs above average. Credit restructuring, digitalization, training and mentorship, business type, gender, education level, business sector, and marketing area were among the elements that were examined. According to the result, MSMEs that received credit restructuring were more likely to achieve above-average TAT (30.87%) than those that did not (21.73%). Digitalization also played a crucial role, as (40.29%) of digitalized MSMEs had above-average TAT, compared to only (13.64%) of those that had not adopted digitalization. Additionally, training and mentoring had a positive impact, as (32.61%) of trained MSMEs achieved above-average TAT, whereas only (18.81%) of those without training. Additionally, MSME performance was impacted by the owner and business qualities. With 29.11% of CV/PT enterprises attaining above average TAT, compared to 20.76% of sole proprietorships, MSMEs registered as CV/PT outperformed single proprietorships. Compared

to MSMEs owned by women (25.90%), those owned by men tended to perform better (30.27%). The percentage of above-average TAT (38.35%) was highest among MSME owners with vocational high school (SMK) diplomas, followed by those with a diploma (29.11%), university (28.83%), senior high school (26.67%), and primary junior high school (25.73%). The largest percentage of above-average TAT (30.31%) was found in the Service & Industry MSMEs, followed by Convection & Fashion (30.78%), Food & Beverage (27.14%), Agribusiness (28.49%), and Craft & Accessories (25.28%). Additionally, MSMEs that operate at a national scale had a greater likelihood of achieving above-average TAT (40.30%) compared to those operating solely in West Java (19.59%). These findings highlight that access to credit restructuring, digitalization, training, formal business registration, male ownership, higher education levels, service & industry sectors, and national-level marketing significantly contribute to better MSME performance. The logistic regression results in Table 2 below were carried out to analyze the impact of the PEN and the characteristics of MSMEs on performance during the pandemic.

The coefficient for the credit restructuring shows a positive value of 0.869, indicating that MSMEs that received credit restructuring increased the log odds ratio by 0.869 compared to MSMEs that did not receive credit restructuring. Nevertheless, the West Java Provincial Government Report (2021), Policy Committee for Handling Covid-19 and Regional Economic Recovery in Java, said that credit distribution in 2021 increased by 1.69% in line with the collection of Third-Party Funds (DPK), which increased by 3.81% compared to

the previous month and year. This is supported by data from the Financial Services Authority (OJK) (Figure 2), West Java Regional Office, which stated that the restructuring of MSME credit was due to the impact of COVID-19.

Total credit restructuring in West Java as of July 2022 reached 528 T, while the allocation for MSME credit restructuring itself was 31.2 T, and the remaining 55.7 T for non-MSMEs (Figure 3). The largest portion of MSME credit restructuring was given to MSME players in the Wholesale and Retail Economic sectors at 51%, followed by Industry and Processing at 15%, Construction and Accommodation at 6% each, and Food and Beverages at 6%. The effect of the financing program on MSMEs in both developing countries has changed, including the use of trade credit, which has also led to stricter investment policies (Eggers, 2020).

In contrast, Supari and Anton (2022) found that the credit restructuring variable produced a negative coefficient of 0.79. This means that MSMEs that receive credit restructuring are 79% less likely to increase their sales. This research also reveals that credit restructuring was successful if accompanied by other UMKM PEN policies, such as getting new loans, getting interest subsidies, and utilizing digitalization over 1 to 3 years. Additional supporting information about financial assistance, as proven in the country of Ghana, where MSMEs were able to revive the economy and provide jobs amidst the COVID-19 pandemic (Aduhene & E., 2021). Besides that, the form of credit restructuring from China includes financial support, such as low-interest or interest-free loans Li Lu et al. (2021).

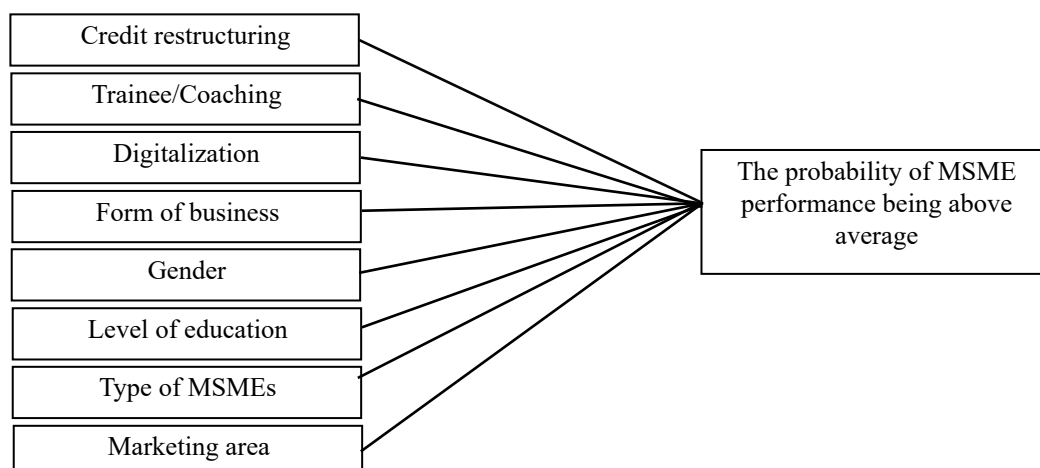


Figure 1. Research framework

Table 2. Logistic Regression Results

Independent Variable	Coefficient	Exp(B)	Sig.
Credit Restructuring	0.869***	2.385	0.000
Digitalization	1.443***	4.235	0.000
Training & Coaching	0.270***	1.310	0.000
Form of Business	0.505***	1.658	0.000
Gender	0.325***	1.385	0.000
High School	0.119	1.126	0.139
Vocational School	0.567***	1.763	0.006
Associate Degree	0.373***	1.452	0.004

Note: *, **, and *** indicate significance at 10%, 5%, and 1%, respectively.

Independent Variable	Coefficient	Exp(B)	Sig.
University	0.209**	1.232	0.015
Food & Beverage	0.018	1.019	0.901
Convection & Fashion	0.159	1.172	0.327
Craft & Accessories	-0.174	0.840	0.305
Services & Industry	0.302*	1.352	0.093
Marketing Area	1.151***	3.160	0.000
Constant	-3.847***	0.021	0.000



Figure 2. Credit Restructuring (OJK West Java Regional Office, 2020)

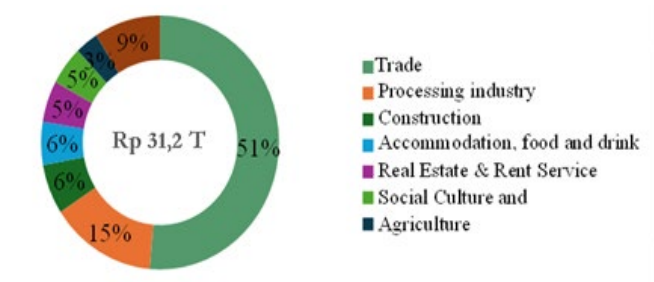


Figure 3. MSME Credit Restructuring Based on Business Type (OJK West Java Regional Office, 2020)

On the other hand, digitalization significantly influences the increase, the log odds ratio of total asset turnover being above average. The coefficient value on the digitalization variable produces a positive result of 1.443, indicating that MSMEs that have digitalized have a higher log odds ratio of total asset turnover above the average by 1.443 compared to MSMEs that have not digitalized. Digitalization used in the West Java Champion MSME program includes e-commerce platforms such as *Shopee*, *Tokopedia*, *Lazada*, *Zalora*, and other social media platforms such as *Facebook* and *Instagram*. Apart from that, West Java Champion MSMEs were also digitalizing according to their banks. For example, for a commercial bank called BRI, there were *BRILink* and *BRILLiant* villages for BRI customers. According to research by Supari & Anton (2022), MSMEs that have adapted to using digital means for 1 to 3 years face a higher probability of resilience, including increasing sales, liquidity, and profitability. Same condition in Jordan during pandemic COVID-19, MSMEs adapted by shifting their business models to digitalization, improving internal communication, and restructuring organizational culture (Abuhussein, Barham, & Al-Jaghoub, 2023). According to Kurniawan et al. (2021), massive social restrictions in various

regions during the pandemic forced MSME players to adapt and drastically change their marketing patterns. This online marketing strategy is considered effective and impacts increasing profits for MSMEs. This is because there is connectivity to develop branding for MSME products, looking for consumers, and the affordability of MSMEs to expand their marketing area. Based on research by Zutshi et al (2021), digital technology can help solve these challenges if small businesses can adapt and use it for managing cost, finances, and marketing. It also helps them handle changes in business models caused by COVID-19 and serious difficulties. Additionally, according to research by Morales S.O. (2021) with digital resources are flexible ways to increase various aspects such as innovation for new products, identifying opportunities, exploring different markets, and managing cash flow.

The next result found that training or coaching significantly influences total asset turnover. In general, the assistance and training received for MSMEs following the PEN Policy include understanding financial inclusion, developing a digital-based MSME ecosystem, and expanding access to MSME financing carried out by the TPAKD and the National Movement

Proudly Made in Indonesia (Gernas BBI). However, at the provincial level, MSMEs are fostered by the relevant provincial agencies. The West Java MSME Champion Program through the Dinas Koperasi dan UMKM has training or coaching called Technology Guidance, Halal Label Training, Packaging Training, Food Safety Training (for MSMEs operating in the agricultural sector), Export-Import Competency Test, Financial Management, Business Matching, Export Training, Workshops, *Balatkop* New Entrepreneur Training (WUB), Champion MSME Financial Bookkeeping, and other. This program continues to facilitate financial inclusion, the development of a digital-based MSME ecosystem, and the expansion of access to MSME financing tailored to the needs of MSMEs supported by the provincial department. Based on research by Nurunnabi, M. (2020) government in Saudi Arabia had a strategy from differentiation to cost leadership to recover lost revenue. Cost leadership refers to a strategy where companies aim to offer products or services at lower prices, one of which is through employee training, enhancing employee skills to improve productivity.

The form of business shows that MSMEs in the form of CV or PT increase the log odds ratio of total asset turnover above the average by 0.505 compared to individual MSMEs. CV or PT MSMEs were generally measured by their net worth and annual sales according to Law No. 20/2008 concerning MSMEs. CV has several advantages, namely faster decision-making with more flexible capital, and they can take *prive* without being taxed. *Prive* itself means dominating a part of the capital or assets of a company. Capital withdrawals are usually used for the business owner's personal gain or the company's needs. Meanwhile, PT has lower risk or liabilities than CV for entrepreneurs and investors if they experience losses. PT can be used for various business fields and can form subsidiaries. The disadvantage of the CV business form is that if it suffers a loss, all assets, including private assets, will be liable. Meanwhile, PT's liabilities will not include personal assets, which is equivalent to a Limited Liability Company (LLC). However, the disadvantage of the PT business form is that dividends are subject to a 10% tax, and closing the PT is more complicated. Apart from that, MSMEs in the form of CV and PT businesses have more detailed financial reports, such as profit and loss, changes in capital, balance sheets, cash flows, and notes to financial reports, than MSMEs in the form of individual businesses. MSMEs, in the form

of individual businesses, tend to refrain from carrying out financial reports on the businesses they run, even though these reports have advantages for MSMEs as an illustration of their financial condition. The financial condition is also useful for business actors if they want to apply for financial assistance from financial institutions or finance companies (Syahrir, 2022).

The coefficient value on the gender variable shows a positive value of 0.325, indicating that male-owned MSMEs have a higher log odds ratio of total asset turnover above the average by 0.325 compared to female-owned MSMEs. This result is supported by data from the Asian Development Bank (2020) in Figure 4, which shows that female ownership of MSMEs in Indonesia experienced a higher rate of temporary closure amidst COVID-19, as much as 51.90% of total MSMEs. This result may explain why the female-owned MSMEs in the West Java Champion program were more likely to experience below-average total asset turnover. Female workers are more vulnerable to COVID-19 because most women work in the informal sector and migrate from rural or suburban areas to big cities. According to Dogar et al. (2022), 2 billion people (61%) are involved in the informal sector, of which 58% are women. Informal work exists worldwide, but the phenomenon is more prominent in developing countries. For example, female workers in India constitute 83% of the informal workforce. In Nepal, more than 70% of female workers are in the informal sector, and 89% are in the informal sector in Bangladesh. In addition, 72% of Pakistan's informal workforce is in non-agricultural work, of which 71.8% are women. Moreover, in developed countries such as New Zealand, women constitute the majority of the unemployed. In the United States, most women are adversely affected by unemployment, lower wages, and related economic impacts (Dogar et al. 2022).

In addition, according to the KPPARI (2020), many women in Indonesia rely on family businesses, but 82% of them experience a loss of income. As much as 80% of men also experienced a decline, but they benefited more from their source of income. Since the pandemic, 36% of female informal workers have had to reduce their working hours compared to only 30% of men. Then, 69% of women and 61% of men spend more time on housework due to social restrictions. This figure shows that women bear the heaviest burden. Considering that 61% of women spend more time caring for and accompanying their children than 48%

of men. Apart from that, the COVID-19 pandemic has had an impact on women's mental and emotional health. This is because 57% of women experience increased stress and anxiety due to increased domestic and domestic burdens, loss of work or income, and experiencing gender-based violence. Meanwhile, the number of men who also experience this problem is 48%. Additionally, to reduce vulnerabilities among women, through women's communities, training, or government support, women can use ICT to work better with customers, suppliers, and others to develop business solutions (Tanoto & Tahalele, 2024).

Figure 5 shows that vocational school graduates have the second-highest unemployment rate after high school. Even though the unemployment rate at the vocational school level is quite high, the vocational school curriculum applies an entrepreneurial spirit according to the major being studied. According to research conducted by Daryani, Rostini, & Tejawiani (2022), which was a case study at SMK Negeri 3 and SMK Negeri 9 Bandung, to prepare job prospects that can adapt to changes in globalization and along with competition for skills and skills, the two schools developed entrepreneurship programs that lead to HOTS (Higher Order of Thinking Skill) cases and independence to realize the intellectual side. As a supporter of the learning process, schools facilitate entrepreneurial practices such as production and service units. Efforts to develop entrepreneurship programs have also been carried out in the Cianjur regency. According to Muslihudin & Ilmaniati (2017), the Cianjur regency area, with sample data from Al-Madinah Vocational School, can potentially develop the local economy through entrepreneurship

in the creative industry. Through Presidential Decree (PerPres) No. 6 of 2009, to support the development of the creative economy, the vocational school education level is one of the levels of education that can support the development of the creative economy. In Cianjur Regency, several vocational schools with relevant expertise are supported, which can develop local potential through entrepreneurship. Furthermore, this research found that the self-efficacy variable had a significant positive effect on interest in entrepreneurship, and income expectations significantly affected interest in entrepreneurship.

The coefficient value on the service and industry variable shows a positive value of 0.302, indicating that MSMEs in the service and industry business types have a higher log odds ratio of total asset turnover above the average by 0.302 compared to those in agribusiness. Supari & Anton (2022) analyzed some cases of MSMEs that decided to change their business type and failed, which implies that there are better business type choices during a pandemic. According to BKTKP (2021), industrial services experienced an increase in only a few industries, including health equipment and medicine services, primary needs such as food, food delivery, delivery services, and e-commerce commodities. Temporary commodities that experienced a decline were industrial raw materials, such as manufacturing, crafts, processing, and others. This is in line with the case in Bangladesh, where SME owners anticipated a shortage of raw materials and placed orders with their suppliers. However, the suppliers were unable to deliver the materials to the Bangladesh MSME owners on time due to the COVID-19 outbreak (Hossain, Akhter, & Sultana, 2022).

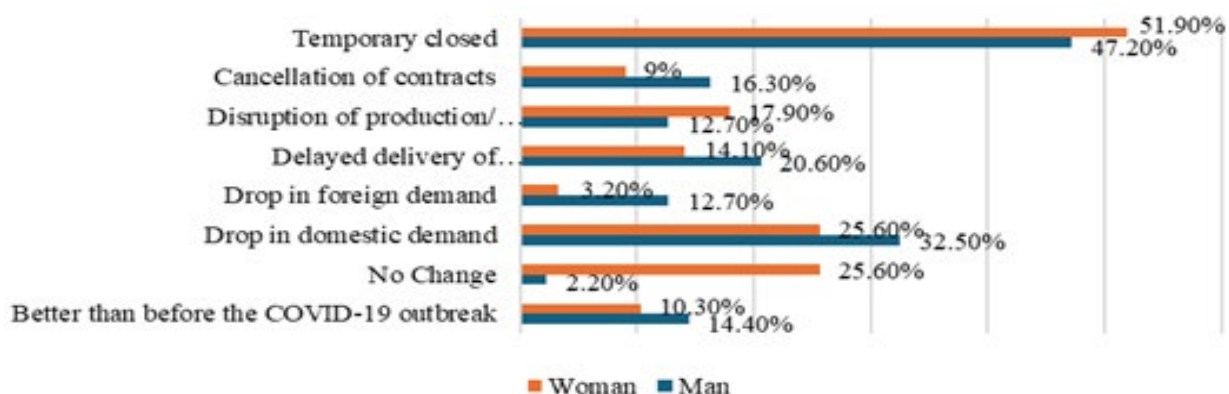


Figure 4. Condition of MSMEs in the Pandemic Based on Ownership (Asian Development Bank, 2020)

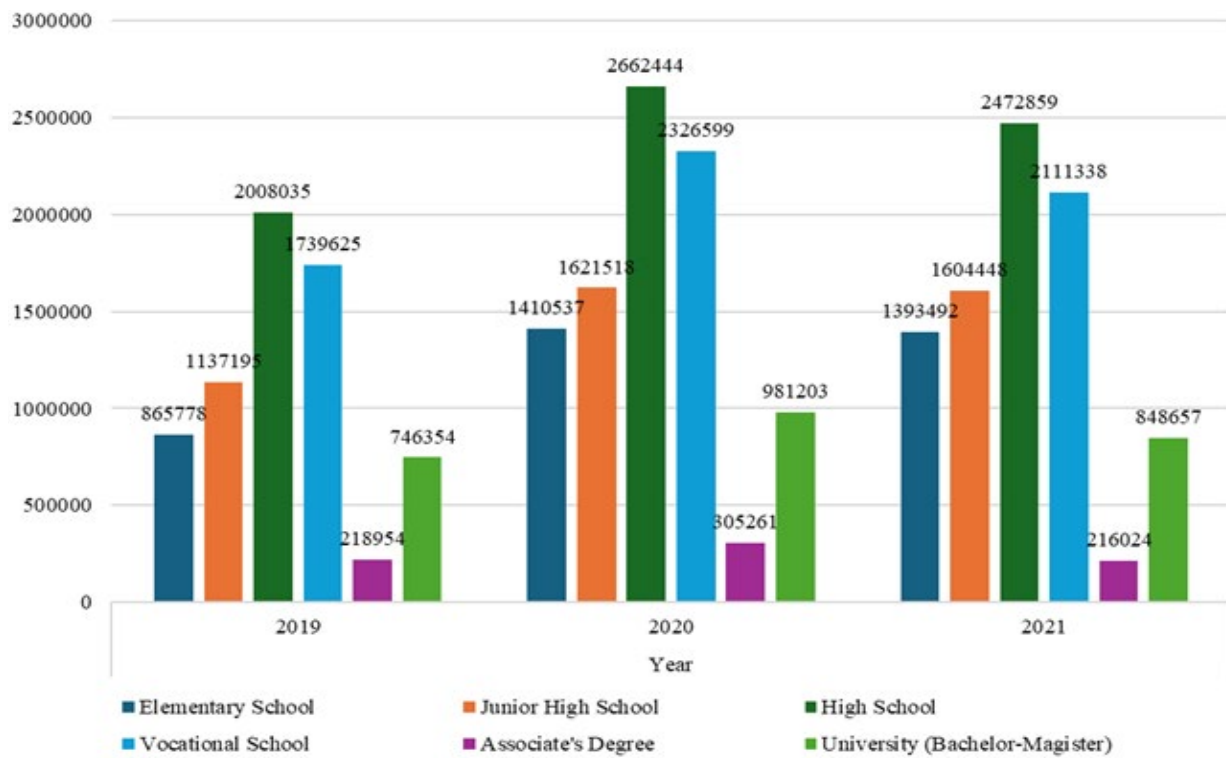


Figure 5. Open Unemployment by Education

The coefficient value on the marketing area variable shows a positive value of 1.151, indicating that MSMEs who marketed their products nationally have a higher log odds ratio of total asset turnover above the average by 1.151 compared to MSMEs who only marketed their products within West Java. According to Kurniawan et al. (2021), the marketing area during the pandemic was related to digitalization. If digitalization is implemented, it will expand the potential marketing area. The online marketing strategy allows MSMEs to expand connectivity and develop better brands. This would effectively identify MSMEs' target markets and potentially increase their profits.

Food and beverage and craft & accessories are the other non-significant variables. Numerous studies have demonstrated the importance of innovation and an entrepreneurial mindset in enhancing the success of MSMEs in the handcraft and food and beverage industries. Market orientation, entrepreneurial orientation, and innovation have a major impact on the business performance of MSMEs in the West Jakarta garment industry (Sondra & Widjaja, 2021). Furthermore, Bivona and Cruz (2021) highlighted how crucial business model innovation is to boosting MSMEs' resilience in this industry. The insignificance of these variables in the study can be linked to a lack of innovation and adaptation among business players,

indicating that other factors may be more dominant in determining the performance of MSMEs in the food and beverage and craft & accessories sectors.

High market rivalry, a lack of innovation, and limited access to finance and technology are some of the main reasons why the food and beverage and craft and accessories variables do not significantly improve MSMEs' performance. There are many companies in the food and beverage and craft & accessories sectors, which lead to narrow profit margins and make it hard for MSMEs to hold onto market share. Additionally, MSMEs typically see a halt in business growth if they are unable to innovate their products or adjust to market trends. Access to capital and technology also remains a major challenge, as many MSMEs in these sectors struggle to secure funding for expansion or invest in technology that could enhance operational efficiency (Bivona & Cruz, 2021). To increase competitiveness and promote the expansion of MSMEs in both industries, policies that encourage innovation, financial access, and technology adoption must be reinforced.

Managerial Implications

The implication of this study highlights several key strategies for stakeholders to support MSMEs' recovery during the pandemic. The credit restructuring

that helps sustain MSEMES needs to be combined with other policies, such as new loans, interest subsidies, and digitalization support, to be more effective. Digitalization has proven to improve MSMEs' performance by expanding market reach and increasing asset turnover, so MSMEs should leverage e-commerce platforms and social media to enhance competitiveness. Training also plays a critical role in boosting managerial capabilities and access to financing, making it important for managers to actively participate in these programs. MSMEs structured as limited liability companies (CV or PT) have advantages in terms of easier access to financing and decision-making flexibility, making these business forms worth considering for long-term sustainability. Moreover, MSMEs owned by women are vulnerable to the negative impact of the pandemic, so additional support is needed for these businesses. Finally, MSMEs operating in the service and industry sectors, as well as those expanding their markets nationally, have better chances of surviving and growing, particularly through digital strategies that can expand market reach and increase profitability.

This study contributes to the theoretical framework of Production Theory, which describes how input components like labor, capital, and technology impact output, and is enhanced by this study. The results are consistent with the Cobb Douglas Production Function, which states that total asset turnover, a measure of MSME performance, is directly impacted by the interaction of labor (training and coaching), capital (credit restructuring), and technology innovation (digitalization). The results support the applicability of production theory in assessing economic recovery plans by showing that MSMEs taking part in the PEN program have increased output efficiency as a result of optimized input utilization. This research also supports external mechanisms (government policies) as a determinant of production efficiency, especially during times of crisis. This study also expands on production theory. However, the study is limited to MSMEs in West Java, reducing its generalizability, and relies on cross-sectional data from 2020-2021, which may not capture long-term effects. Future research should expand the geographic scope, employ longitudinal analysis to assess impacts, and incorporate qualitative methods to explore MSME owners' perspectives and challenges in implementing digital and financial strategies.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The PEN-UMKM policy was expected to improve MSMEs' performance toward recovery along with their internal and external factors. This research found that credit restructuring helps MSMEs reduce financial burdens because it can increase income. Mentoring or training facilitated by the government is also able to strengthen internal factors in the quality of the characteristics of MSMEs themselves, so that they can be independent in running their businesses. From the digital side, MSMEs that have digitized have the possibility of an above-average relative income of the West Java Champion program MSME assets compared to MSMEs that have not digitized. This is due to the creation of connectivity to develop MSME product branding, find consumers, and the affordability of MSMEs to expand their marketing area. Based on our findings, mentoring or training is the most important component of the PEN policy, but its influence is the smallest. Even though to mitigate the negative effects of the COVID-19 pandemic, human resources are the main factor, the combination of upskilling and reskilling is an alternative way of increasing human resource skills.

Recommendations

One disadvantage of this research is that it was limited to MSMEs of West Java Province who participated in the PEN program from Dinas Koperasi dan UMKM. Recommendations based on our findings can focus on several key topics related to the impact of credit restructuring, digitalization, and support policies for MSMEs. These include: Examining the effectiveness of credit restructuring on MSME survival and financial performance during the COVID-19 pandemic, especially when combined with other policies like interest subsidies and digitalization; exploring the role of digitalization in enhancing MSME competitiveness, particularly in terms of asset turnover and market access; investigating gender disparities in MSME performance, as female owned businesses were more vulnerable to the pandemic's effect; analyzing whether business structures like PT or CV provided advantages over sole proprietorships during the crisis; assessing the impact of managerial capacity-building program, such as training on technology financial management, and export skills, on MSME recovery; and conducting

comparative studies on credit restructuring policies across different counties, such as Ghana and China, to evaluate the effectiveness of combined policy measures in supporting MSME success. These research directions can offer valuable insight for shaping more effective policies to support MSMEs during crises and ensure long-term business sustainability.

FUNDING STATEMENT: This research received no specific grant from public, commercial, or not-for-profit funding agencies.

CONFLICTS OF INTEREST: The author declares no conflict of interest.

REFERENCES

- Abuhussein, T., Barham, H., & Al-Jaghoub, S. (2023). The effects of COVID-19 on small and medium-sized enterprises: empirical evidence from Jordan. *Journal of Enterprising Communities: People and Places in the Global Economy*, 334-357.
- Aduhene, D. T., & Osei-Assibey, E. (2021). Socio-economic Impact of COVID-19 on Ghana's Economy: Challenge and Prospects. *International Journal of Social Economics*, 543-556.
- Asian Development Bank. (2020, October). Asia Small and Medium-Sized Enterprise Monitor 2020: COVID-19 Impact on Micro, Small, and Medium-Sized Enterprises in Developing Asia Volume II. From Asian Development Bank: <https://www.adb.org/publications/asia-sme-monitor-2020>
- [BKTKP] Badan Kebijakan Transportasi Kementerian Perhubungan. (2021, Agustus 12). Dampak Wabah COVID-19 terhadap Jasa Logistik. From balitbang.dephub.go.id: <https://baketrans.dephub.go.id>
- Badan Pusat Statistik. (2024, October 16). Badan Pusat Statistik Web Site. From Badan Pusat Statistik Web Site: <https://www.bps.go.id/id/statistics-table/1/OTcylzE=/pengangguran-terbuka-menurut-pendidikan-tertinggi-yang-ditamatkan-1986---2023.html>
- Badan Pusat Statistik (BPS) Jawa Barat. (2023). Badan Pusat Statistik (BPS) Jawa Barat. Retrieved from Badan Pusat Statistik (BPS) Jawa Barat: <https://www.bps.go.id/id/statistics-table/2/NDQxIzI%3D/jumlah-tenaga-kerja-industri-skala-mikro-dan-kecil-menurut-provinsi.html>
- Bank Indonesia. (2020). Laporan Kebijakan Moneter Triwulan II 2020.
- Bivona, E., & Cruz, M. (2021). Can business model innovation help SMEs in the food and beverage industry to respond to crises? Findings from a Swiss brewery during COVID-19. *British Food Journal*, 3638-3660.
- Bhavish, J., Ayush, R., Sheereen, F., & Hema, S. (2017). What Determines The Profitability Of Non-Bank Deposit Taking Institutions? Some Evidence From Mauritius. *The Journal of Developing Areas*, 239-253.
- Daryani, R., Rostini, D., & Tejawiani, I. (2022). Manajemen Lembaga Sertifikasi Profesi Sekolah Menengah Kejuruan dalam Meningkatkan Mutu Lulusan SMK di Kota Bandung (Studi Kasus Pada SMK Negeri 3 dan SMK Negeri 9 Bandung). *Jurnal Ilmiah Ilmu Pendidikan*, 1323-1334.
- Dogar, A. A., Shah, I., Mahmood, T., Elahi, N., Alam, A., & Jadoon, U. G. (2022). Impact of Covid-19 on informal employment: A case study of women domestic workers in Khyber Pakhtunkhwa, Pakistan. *PLoS One* Vol. 17, Iss. 12, 1-14.
- Eggers, F. (2020). Masters of disasters? Challenges and opportunities for SMEs in times of crisis. *Journal of Business Research*, 199-208.
- Gitman, L. J., & Zutter, C. J. (2015). Principles of Managerial Finance 14th Edition. Harlow: Pearson Global Edition.
- Gujarati, D. N. (2003). Basic Econometric 4th Edition. In D. N. Gujarati, Basic Econometric 4th Edition (p. 595). Gary Burke.
- Hossain, M. R., Akhter, F., & Sultana, M. M. (2022). SMEs in Covid-19 Crisis and Combating Strategies: A Systematic Literature Review (SLR) and A Case from Emerging Economy. *Operations Research Perspectives*, 1-13.
- Jaringan Dokumentasi dan Informasi Hukum BPK RI. (2008, Juli 4). JDIH BPK RI: Database Peraturan. From JDIH BPK RI: <https://peraturan.bpk.go.id/Home/Details/39653/uu-no-20-tahun-2008>
- Peraturan Presiden (PERPRES) Nomor 6 Tahun 2009. (2009, Maret 5). JDIH BPK RI: Database Peraturan. From JDIH BPK RI: <https://peraturan.bpk.go.id/Details/42350/perpres-no-6-tahun-2009>
- Kementerian Keuangan. (2020). Kementerian Keuangan Republik Indonesia. From Kementerian Keuangan Republik Indonesia Website: <https://>

- pen.kemenkeu.go.id/in/post/mengapa-program-pen
- [KPPARI] Kementerian Pemberdayaan Perempuan dan Perlindungan Anak Republik Indonesia. (2020, October 24). Survei 'Menilai Dampak COVID-19' : Perempuan Memikul Beban Lebih Berat Dibandingkan Laki-Laki . From Kementerian Pemberdayaan Perempuan dan Perlindungan Anak Republik Indonesia: <https://www.kemenpppa.go.id>
- Kurniawan, E., Idris, Handayati, P., & Osman, S. (2021). Digital Transformation of MSME's in Dindonesia During The Pandemic. *Entrepreneurship and Sustainability Issue*, 316-331.
- Lu, L., Peng, J., Wu, J., & Lu, Y. (2021). Perceived impact of the COVID-19 crisis on SMEs in different industry sectors: Evidence from Sichuan, China. *International Journal of Disaster Risk Reduction*, 66,
- Morales, S. O. (2021). Innovation as recovery strategy for SMEs in emerging economies during the COVID-19 pandemic. *Research in International Business and Finance*.
- Muslihudin, & Ilmaniati, A. (2017). Pengaruh Efikasi Diri dan Ekspektasi Pendapatan, terhadap Minat Berwirausaha Siswa SMK (SMK Al-Madina) . *Jurnal Media Teknik dan Sistem Industri*, 41-49.
- Nurunnabi, M. (2020). Recovery planning and resilience of SMEs during the COVID-19: Experience from Saudi Arabia. *Journal of Accounting & Organizational Change*, 16(4), 643-653.
- Otoritas Jasa Keuangan. (2020, April 7). Delapan Hal yang Perlu Kamu Tahu tentang Restrukturisasi Kredit Pembiayaan: Otorita Jasa Keuangan. From Otoritas Jasa Keuangan Web Site: <https://ojk.go.id/id/berita-dan-kegiatan/Documents/Pages/informasi-covid-19/8%20Hal%20yang%20Perlu%20Kamu%20Tahu%20tentang%20Restrukturisasi%20Kredit%20%282%29.pdf>
- Otoritas Jasa Keuangan. (2020, April 2020). Hal yang Harus Diketahui Mengenai Restrukturisasi Kredit pada Perusahaan Pembiayaan: Otoritas Jasa Keuangan. From Otoritas Jasa Keuangan Web site: <https://ojk.go.id/id/berita-dan-kegiatan/Documents/Pages/informasi-covid-19/Hal%20yang%20Perlu%20Kamu%20Tahu%20Mengenai%20Restrukturisasi%20Perusahaan%20Pembiayaan.pdf>
- Pemerintah Provinsi Jawa Barat. (2021). Rapat Komite Kebijakan Penanganan Covid-19 dan Pemulihan Ekonomi Daerah di Jawa Barat. Pemerintah Provinsi Jawa Barat.
- Sondra, T. C., & Widjaja, O. H. (2021). Pengaruh Orientasi Pasar, Orientasi Kewirausahaan Dan Inovasi Terhadap Kinerja Usaha UKM Bidang Konveksi Di Jakarta Barat. *Jurnal Manajerial dan Kewirausahaan*, 500-508.
- 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. *Multidisciplinary Digital Publishing Institute (MDPI)*, 1-17.
- Syahrir, S. (2022). Analisis Pencatatan dan Pelaporan Keuangan UMKM Di Kota Palu. *JURNAL KEUNIS (Keuangan dan Bisnis)*, 33-42.
- Tanoto, S. R., & Tahalele, N. P. (2024). Assessing The Influence of Information Technology on Female Entrepreneur Empowerment in Indonesia: The Role of Social and Psychological Capitals. *Indonesian Journal of Business and Entrepreneurship*, 581-593.
- [TPAKD] Tim Percepatan Akses Keuangan Daerah Jawa Barat. (2020). Petunjuk Tenis Penyusunan Program Kerja TPAKD. Jakarta: Otoritas Jasa Keuangan.
- Zulfikar, R., Lukviarman, N., Suhardjanto, D., & Agustini, S. W. (2017). Competition, Independent Commissioner, Risk Disclosure and Final Performance. *Review of Integration Business and Economics Research*, Vol. 6, 92-104.
- Zutshi, A., Mendy, J., Sharma, G. D., Thomas, A., & Sarker, a. T. (2021). From Challenges to Creativity: Enhancing SMEs' Resilience in the Context of COVID-19. *Multidisciplinary Digital Publishing Institute*, 6542.