



Building Business Resilience of Small and Medium Enterprises Through Managerial Skills and Innovation on Second Wave of Covid-19 Pandemic (Study to Batik SMEs in East Java Indonesia)

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Abstract. This research is to ascertain the moderating effect of innovation on the relationship between managerial skills and business resilience on small and medium Enterprises (SMEs) in second wave of the pandemic. This research approach is classified as quantitative research, the data is obtained by means of a questionnaire distributed to business operators directly or to the association. The study is descriptive statistics, regression analysis and Sobel test hypothesis. Determination of the sample to be used in this study using judgment sampling and obtained 134 appropriate data. The results of the study prove that innovation is a significant bridge between managerial skills and business resilience. Managerial skills have no significant effect on business resilience but significantly affect innovation. The study have implications for SMEs to innovate and adapt to environmental changes to maintain business continuity. Covid-19 has had an impact on the world's economic downturn in every industry sectors, especially those are in SMEs, and business resilience is a vital point to face the pandemic. The role of managers is much needed by SMEs, the ability of managers to create innovations with new values is expected to create organisational resilience.

Keywords: Managerial skills · innovation · business resilience · Small Medium Enterprises (SMEs) · second wave covid-19 pandemic

1 Introduction

Covid-19 is a condition that has shocked the world, a pandemic that has never been predicted before and has an impact on all sectors, both political, social, and economic. The Johns Hopkins dashboard states that Covid-19 has caused the death of a world population of more than 3.68 million people and more than 171 million people were infected with the Covid-19 virus on 02 June 2021 (<https://ccp.jhu.edu/kap-covid/>). For developing countries like Indonesia, Covid-19 poses a very crucial obstacle because it causes the economy to experience a downturn, many of the industrial sectors are unable to survive and go bankrupt. The government focuses on health issues and seeks to stop

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the transmission of Covid -19 with various policies which of course also have an impact on the industrial sector, especially the small and medium industry (SMEs) sector.[1] in their research argues that the pandemic poses various complex problems, especially in small industries, including stagnant production levels, In Indonesia, SMEs is a sector that contributes the largest GDP with a very high absorption of labour. [2] stated that SMEs in the last three years 2016–2019 experienced an average growth of 4.2% year-on-year with a GDP contribution of more than 50%. Industry is categorized as micro, small and medium depending on the capital used to run its business, in Indonesia it is regulated in Law no. 20 of 2008 which is a business with a net worth of IDR 50 000 000 classified as micro-enterprises, the value of assets is more than IDR 50 000 000 up to IDR 500 000 000 is classified as a small business, and if the value of wealth is more than IDR 500 000 000 then it is classified as a medium business.

Covid-19 in Indonesia began when (CNN, 2020) reported the discovery of Covid-19 sufferers on 02 March 2020, and the number of people exposed to it continued to increase with a very fast spread. Indonesia as a country with a population of around 270 million people and the death rate due to exposure to the Covid-19 virus reached 70 000 people, the peak occurred in the second wave of 2021 with the delta virus variant. One of the initial steps taken by the Indonesian government to stop the transmission of the virus was to impose a policy of limiting community activities. The beginning of the downturn in the SMEs sector was since the implementation of the *social distancing policy* and the rapid mass media coverage that resulted in changes in people's behaviour both socially and economically. The closure of the tourism sectors and restrictions on population interaction between regions made local products experience a slump or even some went bankrupt and closed their businesses. The business cycle has stopped, and most of the small and medium-sized industrial sectors are experiencing financial difficulties, apart from the small capital factor, this sector does not have enough safe sources of capital for the current pandemic situation, so many have gone bankrupt [3].

Batik, which is one of the *handicraft products* or regional uniqueness, has felt a significant impact from the implementation of the Indonesian government's policy, namely the PSBB (Large Scale Cross-Border Restriction). *Batik* in the East Java region with a style and variety that has a philosophy in accordance with the culture of the local community, provides a special attraction for local people and tourists, but with the implementation of the Cross-Border Movements policy, many handicraft-producing industries have gone out of business, including the *batik* industry. Managers and business actors must make new breakthroughs to create competitive advantage and organizational resilience based on very drastic environmental changes [4], because *batik* or handicraft products are not a priority need during a pandemic. The main problem faced by small and medium industrial business actors is in the managerial aspect; ability in terms of human relations and technology, especially when there is a very drastic environmental change [5].

Various efforts were made by the government, in 2021 the Indonesian government accelerated the vaccination process for all residents as a step that was also taken by many countries in the world to reduce the death rate. As a measure of economic recovery, the Indonesian government also provides stimulation for business actors to grow again during the new normal period. Gradually the community's economic activities are running again, but the pandemic has drastically changed the lifestyle or behaviour of

the community. This change in behaviour must be caught by business actors so that the business they run is able to survive and grow again. Manager capability is an important factor to see opportunities from changes in people's attitudes during the pandemic, namely *hygiene, low touch, less crowd, and low mobility* (CNBC Indonesia, 2021,). [6] argues that the ability of managers to produce business innovations, many SMEs sectors are slumped during a pandemic, in addition to the immorality factor, one of the reasons is the failure of managers who have not been able to capture opportunities from changes in people's behaviours, managerial abilities can create advantages by looking at environmental changes dynamic [7].

Innovation is part of business sustainability, but in emerging economic situations innovation can also be a core problem in creating business resilience and growth [8], sustainable innovation can also overcome financial difficulties, especially in the small and medium industrial sector [9]. In post Covid-19 conditions, to achieve business resilience, it is very necessary to have innovation that adapts to change [10], besides that innovation is also closely related to technology, and this is a demand for small and medium industries [11]. And to create innovation, it is necessary to have good managerial skills from business actors [12–14].

The managerial aspect is an important factor in creating business resilience, which in this context is how *batik* SMEs in East Java as local products that contribute to the Indonesian national economy are able to survive the post-pandemic period and grow again. Various studies state that SMEs have a very vulnerable business continuity [15], requiring a very high adaptability to dynamic environmental changes [16]. Many studies have examined how the SMEs sector creates business resilience [17, 18]. However, from several previous empirical studies that have examined the SME sector during the Covid-19 pandemic, there are still many who have not measured how SMEs build business resilience during the pandemic, but only measure the impact experienced by the SME sector. [1, 3, 19].

In this study, the business resilience of *batik* SMEs that produce regionally unique products is reviewed referring to [20] and [21], namely how *batik* SMEs *recover* and create business resilience during the Covid-19 pandemic. Management ability and innovation aspects is a determinant used to measure the resilience of *batik* SME businesses in the East Java region of Indonesia, which is one of the sectors affected. The innovation means how business actors create new value by paying attention to the changes in people's behaviours during the second wave of the Covid-19 pandemic?; How is the impact of the innovation created on the resilience of the *batik* SME business during the second wave pandemic and are the innovations created able to mediate managerial skills in achieving good business resilience and growing again during the second wave of the pandemic?

Our research presents a conceptual framework for the business resilience of *batik* SMEs through their managerial skills by mediating innovation during the second wave of the pandemic, referring to the empirical work carried out by [16, 21–23] at the time of post Covid-19 stated that organizational capability and innovation had an impact on business performance, which in the current study was measured by business resilience.

1.1 Managerial Skills

In several previous empirical studies of strategic management describing managerial skills in three typologies which include administrative ability, human relations, and technical ability [6, 24] also postulated similar things including technical skills in problem solving, supervision and ability to obtain information, as well as planning and decision making. In the next empirical, the typology of the manager's ability becomes a measure of the success of managers in running a business [25]. Managerial ability is the main determinant in the Covid-19 crisis situation, although several previous studies have stated that managerial ability has a negative effect on business performance, in this current study the managerial aspect will be re-examined and it is considered that managerial decisions can have a long-term impact on business continuity. This is in line with research [26]. Which states that managerial ability has a significant effect on business continuity, namely how policies and strategies are made and decision making can effectively overcome crisis situations.

1.2 Innovation

Innovation is the first effective implementation of a new process or product [27]. The importance of innovation for companies was first investigated by [28] who argued that innovation was created for business continuity and to deal with environmental changes. In line with the findings of [29] namely that innovation is not just change but rapid change for business continuity and sustainability in an uncertain environment. In the context of small and medium enterprises, innovation is a stimulus to improve their economy and is imperative for SMEs in developing countries who have the resources and capabilities to create innovation [16]. Innovation has a relevant relationship with entrepreneurs or institutions [18] and in a wider scope, high innovation will produce competitive outputs [11]. Innovation in the socio-economic perspective is a very vital transformation, namely managers must understand how products and business processes are run [30]. Innovation is a support system needed during the Covid-19 crisis situation for business continuity [16], in his research how innovation can develop supply chain management in the SME sector. Innovation can create sustainability and competitiveness, related to the Covid-19 pandemic, sustainability is a dream for all business actors, especially the SME industry [27]. Product and process innovation is the dominant aspect covering logistics, distribution system, production method and technology adoption [30].

1.3 Business Resilience

The meaning of the word resilience has several etymological meanings, in this study the intended resilience is related to the dynamic process of recovering economic conditions after experiencing adversity and the ability to grow again [31]. [9] states that the business resilience of a business that is run is the ability to rise from adversity with creativity and is flexible or quickly adapts to the environment, in line with opinions [32]. Business resilience is not just the ability to survive environmental changes that are unpredictable but also how organizations are able to grow rapidly again [33]. [34] argues

that entrepreneurial business resilience is the ability to adapt to crisis situations and overcome obstacles to regrowth by making changes, the same thing has been postulated by several researchers [15, 17]. Business resilience is also defined as the organization's ability to maintain business continuity [35].

2 Hypothesis

2.1 Managerial Skills and Business Resilience

The business resilience of the SME sector is very vulnerable in the Covid-19 crisis situation, business stimulation is provided by the government with policies that encourage this sector to grow, but internal factors also play a very important role in the sustainability of the business being carried out. The intended internal factor is the resources owned in particular are managerial abilities, managerial abilities affect the performance and sustainability of the organization in a very dynamic environment [13]. Managerial skills is one aspect of resources that has a significant impact on business resilience [20], the results of the same study were also conducted by [36] which stated that skills are needed in the context of increasing business resilience, especially during the current pandemic crisis. Based on these reviews, the following hypothesis is formulated:

H1: managerial ability has a positive effect on business resilience

2.2 Managerial Skills and Innovation

The innovation paradigm can be created with the ability of managers which in the end the organization is able to create an advantage for the continuity of the business being run [37]. Managerial factors will help managers to develop and innovate in commercial activities [12, 14]. A similar study was also conducted by [6] whose findings also state that managerial ability in a very dynamic environment has a significant positive effect on innovation [38]. From empirical studies and phenomena that occur the second phase of the Covid-19 pandemic, managerial skills are still considered an important aspect to create innovation and the following hypotheses are formulated:

H2: managerial ability has a positive effect on innovation

2.3 Innovation and Business Resilience

The crisis conditions caused by the Covid-19 pandemic have brought rapid changes to the environment and economy, especially the small and medium-sized business sector, the challenges of environmental change that are more flexible and adaptable require enterprises to have innovation and strength or resilience to be able to survive and develop [27, 39–44].

H3: Innovation has a positive effect on business resilience.

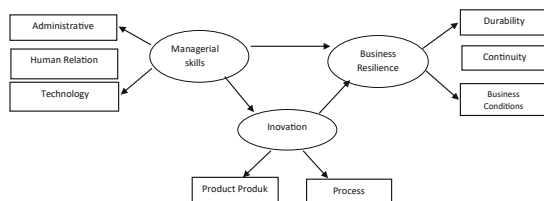


Fig. 1. Conceptual Framework

2.4 Managerial Skills, Innovation, and Business Resilience

Business resilience can be achieved by continuous innovation, innovation can be created by one of the factors, namely good managerial ability. Referring to previous studies (Howard and Steffen, 2022; Mena, Karatzas, and Hansen 2022) the following hypothesis is formulated:

H4: managerial ability has a positive effect on business resilience through innovation mediation.

Referring to the various empirical studies above, the conceptual framework in this study which includes managerial ability with indicators (administrative ability, human relations, technical and technology, innovation using indicators (process and product innovation), while business resilience uses 3 indicators (endurance, sustainability, and business conditions) are presented as in Fig. 1.

3 Methodology

This study uses a quantitative method to test the business resilience of East Java batik entrepreneurs who are classified as small and medium industries that have experienced the impact of a pandemic. The factors used to measure are managerial ability and innovation. The number of samples is 134 SMEs in the East Java Region of Indonesia which have batik products with potential domestic and foreign markets. The sample method is purposive and uses a questionnaire that meets the requirements of validity (r-table) and reliability (Crobanchs Alpha more than 0.600) which is circulated to respondents directly or through business group associations under the auspices of the Cooperatives and SMEs Service in the East Java region of Indonesia. Then the data was processed using the *Sobel test* with a description of the formulation which includes the standard error value of the indirect effect (Sxz) on the significant level 0.05, the path of the mediating variable with the dependent (z), the path of the independent variable with the modification (x), the standard error of the mediating variable (sz), the standard error independent variable (sx), the t value that will be compared t table (e) to determine the effect of innovation as a mediation between managerial ability and business resilience with the following model formulation:

$$Sxz = \sqrt{\beta z^2 sx^2 + \beta x^2 sz^2 + sz^2 + sx^2}$$

$$t = \frac{xz}{sxz}$$

4 Result

4.1 Characteristics of Respondents

The characteristics of the respondents in this study were the majority owner and manager with gender being female. Batik SMEs is a business that has been run from generation to generation from families with the majority owner age of more than 40 years who have been in the batik business for a long time. The education level of the majority of batik business actors is high school level but has been pursuing this field from generation to generation. The majority of workers in batik SMEs are 5–10 people with business age mostly more than 20 years (Table 1).

4.2 Validity Test Results

The validity test in this study was used to test the validity of the instrument for each question item on each indicator; managerial skills, innovation, and business resilience with a significance level of 5% and r -Table 0.176.

4.2.1 Managerial Skills

Managerial skills using basic typology which includes administrative ability, human relations, and technical ability which includes mastery of technology, the test results show that the three indicators used meet the valid test requirements with an r -Table value of more than 0.176, namely the Pearson Correlation value of administrative ability 0.328, human relations 0.412, technical ability and mastery of technology 0.309.

4.2.2 Innovation

The validity test on the Innovation variable includes two indicators (Process Innovation and product innovation); with the results listed in Table 3 which shows that the Person Correlation value meets the validity requirements with a product innovation value of 0.473 while process innovation is 0.487 greater than 0.176; to be concluded that both indicators are qualified as the validity requirements.

4.2.3 Business Resilience

The validity test on the Business Resilience variable includes three indicators (durability, sustainability and business conditions); with the results of the Pearson Correlation value of more than 0.176 as follows: durability 0.561, sustainability 0.790, and business conditions 0.444. The three indicators used to measure business resilience meet the validity requirements. (Table 2).

4.3 Reliability Test

The reliability test on the research instrument from the three variables used (managerial ability, innovation, and business resilience) used Cronbach alpha and the results obtained from each instrument > 0.600 so that it was declared to meet the reliable requirements; the test results are listed in Table 3, namely managerial skills 0.757, innovation 0.858, and business resilience 0.697.

Table 1. Characteristics of Respondents

Characteristics	Number of	%
Respondent status		
Owner	118	88%
Not owner (business person)	16	12%
Total	134	
Gender Owner		
Men	27	20%
female	107	80%
Total	134	
Age Owner		
20–30 years	8	6%
30–40 years	10	7%
>40 years	116	87%
Total	134	
Characteristics		
Number of Owner Education Level		%
Elementary/Middle/High School	100	75%
Diploma/Under Graduate	34	25%
Total	134	
Employee		
1–5 people	28	21%
5–10 people	86	64%
> 10 people	20	15%
Total	134	
Business Age		
5–10 years	15	11%
10–20 years	38	28%
>20 years	81	61%
Total	134	

Source: author's work., Respondents Batik SMEs (n = 134)

Table 2. Business Continuity Validity Test

Indicator	Test Terms		Significant		Note.
	Pearson Correlation.	Table	Test Value	Criteria	
Durability	0.561	>0.176	0.000	<0.050	Valid
Sustainability	0.790		0.000		Valid
Business condition	0.444		0.000		Valid

Source: author's work. * p < 0.05

Table 3. Reliability of research variables

Variable	Cronbach’s Alpha		Information
	Test Value	Criteria	
managerial skills	0.757	>0.600	Reliable
Innovation	0.858		Reliable
Enterprise Resilience	0.697		Reliable

Source: author Work * p < 0.05

Table 4. Partial Test Result [Variable dependency “Business Resilience”]

Model	Unstandardised Coefficient		Standardised Coefficients	t	Sig.
	B	Standard. Error	Beta		
(Constant)	82.064	38.708		2.256	0.036
Managerial skills	.498	.048	.207	2.684	0.069
Innovation	.983	.093	.461	5.654	0.000

Dependent variable: Business Resilience
 Notes: Standardized coefficient *p* < 0.05.
 Source: author Works.

5 Discussion

5.1 Direct Influence

The test results with a significance level of 5% indicate that the determination of business resilience shows a positive value of 0.489 and 0.983, which means that these variables will provide a linear direction or influence on business resilience. Managerial skills with a t-count value of 2.684 more than 1.960 with a significance level of 0.069 greater than 0.005 means that managerial has a positive effect on business resilience but is not significant, while the results of the innovation test show a t-count value of 5.654 greater than 1.960 at a significance level of 0.000 less than 0.05 it means that innovation has a significant positive effect on business resilience. Meanwhile, the results of the managerial skills test on innovation are 4,217 greater than 1,960 with a significance level of 0.000 less than 0.05, meaning that managerial skills have a positive and significant effect on innovation. The test results are shown in Tables 4 and 5.

5.2 Indirect Influence

After testing the direct influence of the determinants of business resilience, a mediation test is carried out to test the effect of managerial skills (X) on business resilience (Y) through innovation (Z) using the Sobel Test/Bootstrapping test with the results shown in Fig. 2. Based on Fig. 2, the formulation of the Sobel test is:

$$S_{xz} = \sqrt{(0.983^2 \times 0.013^2) + (0.253^2 \times 0.093^2) + 0.013^2 + 0.093^2}$$

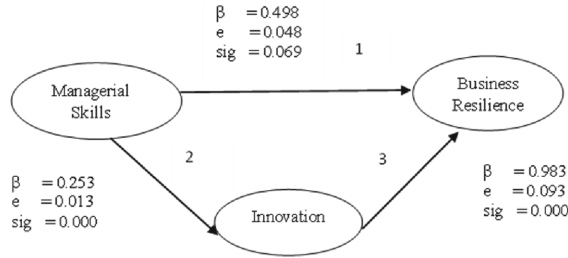


Fig. 2. Research Model Results

$$\begin{aligned}
 &= 0.097647 \\
 t &= \frac{0.253 \times 0.983}{0.097647} \\
 &= 2.5740
 \end{aligned}$$

The formulation results show a t value of 2.5470 which is greater than 1.960, meaning that innovation is significant as a mediation between managerial skills and business resilience. The result is the multiplication of the beta value and the standard error of managerial ability and innovation.

6 Conclusion

The results of this research during the second wave of the pandemic provide a new perspective, managerial skills does not significantly affect business resilience as indicated by a t value of more than 1,960 but a significance greater than 0.05. Our findings differ from several previous studies which state that managerial skills is able to have a positive and significant impact on business resilience [18, 36]. The Covid-19 pandemic brought enormous changes, not only to health problems but also to people’s very low purchasing power. During the post Covid-19 pandemic period or the second wave of the pandemic, all countries are trying to recover the economy [21].

In the current pandemic crisis situation, Batik SMEs, which are *handicapped*, mean that they are not products whose consumption level is a priority, so they really need good managerial skills to create innovations so that businesses can survive in dynamic situations or even economic conditions are slumping [12, 14, 22, 38]. How these batik products still have people’s purchasing power so that business continuity can be achieved, along with the policies given by the Indonesian government to spur the sustainability of small and medium industrial sectors. Batik business actors are required to create product and process innovations. Product innovation is meant to create a unique or new style, while process innovation is in terms of product sales or distribution methods. The Covid -19 pandemic has changed people’s behaviour, including in terms of shopping to meet the needs of life, batik business actors must be able to capture this change in behaviour as a new business opportunity for the sustainability of their businesses. One way in process innovation is to use market places and social media as a means to meet consumer needs.

Innovation is an effort created by taking into account opportunities and a very dynamic environment [27, 28, 30, 37].

During this second wave of Covid -19, business actors have begun to adapt to the conditions and changes in the socio-economic environment of the community. Based on the test results it is stated that innovation has a significant effect on business resilience and is significant as a mediation between managerial skills and business resilience, in line with previous empirical studies [18, 27, 30, 38, 40–42]. This shows that innovation is an important factor for business continuity and creating business growth again. Specifically, this study proves that changes in people's behaviour in the second year of this pandemic must be used as opportunities for business performance, process innovation, especially in product distribution, must continue to be carried out for business security.

Our research shows that managerial skills has no significant effect on business resilience, but managerial skills has a significant effect on innovation. In the second year of the Covid-19 pandemic, the core problem lies not only in the technical and administrative capabilities of a manager, but rather in the ability to create innovations based on changes that occur in society. The batik industry is mostly a business that is passed down from generation to generation or family heritage, there are still many business actors who have not utilized optimal technology in running their business. Technological developments have an important role for business continuity, therefore there must be process innovations that are carried out, and including product distribution channels must still be able to run with these technological facilities. The restriction border movement policy implemented by many countries is one of the causes of the decline in business performance. In a pandemic situation that brings changes in people's behaviour, it is not enough only the managerial aspects of business actors but how managerial skills can create new innovations or values. Batik SMEs innovation, especially process innovation during the second wave of the Covid -19 pandemic, had a significant impact on business resilience, innovation was also significant as a mediation between managerial ability and business resilience [45].

7 Limmitation of the Study

The results of this study can provide a perspective for business actors in the small and medium industrial sector, especially those in the local or handicraft industry in developing countries in the world. This research is also the same as previous studies which have limitations and need to be reviewed in further research, the limitation of this study is that this research is only on one dimension of time during the second wave of the pandemic with various policies from the government for economic recovery that can provide stimulation for industry. SMEs to grow again. Further research needs to be continued with the conditions when government policies are normal, whether the SME sector is still able to increase its growth in a sustainable manner. The indicators used to measure each variable are still limited, it is necessary to add other indicators relevant to the SME industry. The sectors used are still limited to the batik industry or handicraft products, it is necessary to add other sectors that contribute to gross domestic product in developing countries. In further research, it is necessary to add variables other than managerial ability and innovation, namely government policies, local community

Table 5. Partial Test Results [dependent variable “Innovation”]

Model	Unstandardised Coefficient		Standardised Coefficients	t	Significant
	B	Standartd. Error	Beta		
(Constant)	312,568	20,441		14,287	.006
managerial skills	.253	.013	.372	4.217	.000

Dependent variable: Innovation

Notes: Standardized coefficient $p < 0.05$.

Source: author Works.

culture and dynamic environment to measure the resilience of small and medium-sized industries.

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