

The Role of Innovation Capability in MSME Sustainability During the Covid-19 Pandemic

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ABSTRAK

Usaha mikro, kecil, dan menengah (MSM) adalah kegiatan bisnis yang mampu memperluas pekerjaan dan menyediakan layanan ekonomi bagi masyarakat secara luas, dan juga memainkan peran dalam menyamakan dan meningkatkan pendapatan orang, mendorong pertumbuhan ekonomi, dan mewujudkan stabilitas nasional. Usaha mikro, kecil dan menengah (MSM) juga memainkan peran penting dalam meningkatkan ekonomi masyarakat di tingkat kota dan kantor. Penelitian ini bertujuan untuk menganalisis bukti empiris bahwa kemampuan dan faktor lingkungan yang dilakukan oleh UMKM memiliki efek positif pada inovasi, baik inovasi produk maupun inovasi proses. Metode yang digunakan dalam penelitian ini adalah model persamaan struktural analisis PLS. Populasi dalam penelitian ini adalah jumlah total MSM yang terdaftar di Departemen Perdagangan dan Industri pada tahun 2020 sebanyak 31591 bisnis. Teknik pengumpulan data dilakukan dengan mendistribusikan kuesioner. Model pengukuran dinilai dengan menguji reliabilitas setiap item, validitas konvergen dan validitas diskriminan. Hasil analisis menunjukkan bukti empiris bahwa kemampuan inovasi dan faktor lingkungan yang dilakukan oleh sektor UMKM memiliki efek positif yang signifikan pada inovasi, baik inovasi produk maupun inovasi proses. Studi ini menyimpulkan bahwa kemampuan inovasi dan faktor lingkungan di sektor UMKM dapat meningkatkan inovasi dan berdampak pada keberlanjutan MSM. Kontribusi penelitian ini adalah bahwa kemampuan inovasi dan faktor lingkungan dapat meningkatkan inovasi yang dibuat oleh UMKM.

ABSTRACT

Micro, Small, and Medium Enterprises (MSMEs) are business activities capable of expanding employment and providing the economic services for society widely, and also play roles in equalizing and increasing people's income, encouraging economic growth, and realizing national stability. Micro, Small and Medium Enterprises (MSMEs) also play an essential role in improving the community's economy at the city and regency levels. This study aims to analyze the empirical evidence that the capabilities and environmental factors carried out by MSMEs have a positive effect on innovation, both product innovation and process innovation. The method used in this study is the Structural Equation Model PLS analysis. The population in this study is the total number of MSMEs which registered with the Department of Trade and Industry in 2020 as many as 31591 businesses. The data collection technique is done by distributing questionnaires. Measurement models are assessed by testing the reliability of each item, converging validity and discriminant validity. The results of the analysis show empirical evidence that innovation capability and environmental factors carried out by the MSME sector have a significant positive effect on innovation, both product innovation and process innovation. This study concludes that innovation capability and environmental factors in the MSME sector can increase innovation and have an impact on the sustainability of MSMEs. The contribution of this research is that the capability of innovation and environmental factors can increase the innovation made by MSMEs.

1. INTRODUCTION

Law of the Republic of Indonesia Number 20 of 2008 on Micro, Small, and Medium Enterprises emphasizes that Micro, Small, and Medium Enterprises (MSMEs) are business activities capable of expanding employment and providing the economic services for society widely, and also play roles in

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equalizing and increasing people's income, encouraging economic growth, and realizing national stability. Micro, Small and Medium Enterprises (MSMEs) also play an essential role in improving the community's economy at the city and regency levels. The reason is that MSMEs are large enough producer and consumer entities so that the money in the community experiences a turnover from and by the MSMEs themselves. Besides, MSMEs are more resilient, so they are more resistant to the economic and monetary crisis (Hamza & Agustien, 2019; Yuniarta & Purnamawati, 2020). Until now, MSMEs have a vital role in a nation. MSMEs also substantially contribute to increasing GNP (Gross National Product), MSMEs have contributed 70% of the national income level. More than 55% of the workforce is absorbed in MSMEs' economic activities (Asare et al., 2015; Martin et al., 2013). During the Covid-19 pandemic, it is difficult for MSMEs (Micro, Small, and Medium Enterprises (MSMEs) to maintain their company sustainability. None other than all supporting sectors have also experienced a very severe setback. The depositor of raw materials experienced difficulties in getting goods; the marketing department also did not work because the community's purchasing power was meager; as a result, there were many layoffs (Amri, 2020; Pakpahan, 2020). In the face of the Covid-19 pandemic period, MSME creativity is also very much needed when you want sustainability. MSMEs' performance and innovation play a very high role in their effort.

Innovation is essential for MSMEs because it can increase companies competitiveness, industries, and the economy. Barriers to innovation at MSMEs are financial difficulties due to high innovation costs, increased economic risks, and personal internal limitations in effectively and efficiently managing the innovation process (Hjalager, 2010; Hurley & Hult, 1998). According to previous study, innovation as creativity and/or adoption of new ideas, new processes, new products or new services aimed at increasing value to customers and contributing to company performance or effectiveness (Hansen, E. et al., 2006). Innovation is the key to increasing productivity through the process of developing and creating new, higher values, products, and services (Li et al., 2019; Mitussis, 2010). The results previous research (2011), show that continuous innovation and outstanding customer service in the long term create and maintain superior performance (Keizer et al., 2002). Meanwhile, the results of research by Gheorghe and state that companies to survive continuously must be competitive and innovative (Gheorghe & Alexandru, 2010). Innovation is a step taken by companies to survive and excel in competition in the era of globalization, because changes occur very quickly. Companies cannot stick with the same strategy for long. The understanding of continuity, where products and production processes can survive in the long term has been replaced by discontinuity, namely products and production processes that change rapidly due to shifts in the market due to the emergence of new technologies (Kaplan, 2001; Yasa et al., 2016). Innovation has two basic forms, which distinguish between technological innovation (product and process) and non-technological innovation (organizational and marketing based) to distinguish the technical basis from the administrative basis in the innovation activities of tourism enterprises (Camisón, C. dan Monfort-Mir, 2012; Martinez-Roman et al., 2015). Product/service innovation is an important performance factor that provides the capability for expansion into new markets and industries and allows exploring opportunities to earn abnormal profits and provides a route for firms to earn profits (Damanpour & Gopalakrishnan, 38 C.E.; Nambisan, 2003). Process innovation as the introduction of new tactics for a product or service or a new way to commercialize a product or service Process innovation may have an influence on productivity, profitability growth (Cooper, 2006; Hjalager, 2010). Therefore i Process innovation should be a new change to the act of producing or delivering a product that allows significantly increased value delivered to stakeholders (Blake et al., 2006; Krizaj et al., 2014)

Innovation capability is defined as the ability of an organization to develop and modify its products and technologies, or to create new products and technologies. According to previous study in developing innovation, we need innovation capability (Calantone et al., 2002). This is supported by innovation ability is defined as the ability to transform knowledge and ideas into various forms of processes, and new systems, for the profitability of an organization or company (Dodgson, 2009; Games & Rendi, 2019; Hair Jr. et al., 2010). Research by other study explains that innovation capability has a strong and significant impact on product innovation, marketing, and organizational process innovation (Rajapathirana & Hui, 2018). Previous research has found that one of the factors that influencing innovation is the competitive force of the industry (Chang et al., 2011). An environment with high dynamics and positive competitiveness related to innovation. According to previous study increasing innovation is a way to reduce business competition in the UK (Bennett & Smith, 2002). The characteristics of external-related competition such as concentration and barriers to new entrants have a significant effect on innovation in SMEs in Greece (Henseler et al., 2009; Kusmayadi, 2008). In tourism research, it has been proven that government policies can facilitate innovation, efficiency, and competitiveness in companies from this sector (MacMinn Richard, 2006). The influence of government policies in the form of subsidies innovation and public incentives have a positive influence on innovation (Keizer et al., 2002). Information and support provided by the government as well as the import of advanced technology allow

manufacturers to learn skills and knowledge from foreign competitors which can significantly improve process innovation (Martin et al., 2013). This research aims to discuss the relationship between a number of variables that have the potential to influence product innovation and process innovation in MSMEs in OKU district, South Sumatra. Analysis of previous research shows a number of factors that can determine the success of product innovation and process innovation in a business organization. This study continues the previous research related to innovation capability, and environmental factors as constructs that affect product innovation and process innovation in the context of business organizations in Spain (Martinez-Roman et al., 2015). The ability of MSMEs to implement innovation is crucial because as MSMEs, they also have to face the fact that they experience limitations in dealing with situations of intense competition and change, especially in terms of information and communication technology that is so fast.

2. METHODS

The research method used is quantitative. The unit of analysis in this research is MSMEs actors using research variables: innovation capability (X1), environmental factors (X2), product innovation (Y), and process innovation (Z). The data collection technique is done by distributing questionnaires. The population is the whole objects or subjects in an area that meets specific requirements related to the research problem or the entire unit or individual within the scope studied (Arikunto, 2007; Martono, 2012). The population in this study is the total number of MSMEs in Ogan Komering Ulu Regency registered with the Department of Trade and Industry in 2020 as many as 31591 businesses. Research sample is a part or a representative of a research population. The determination of the number of samples in the research used the Slovin formula. This study uses PLS to test structural equations, because PLS is more suitable for data with smaller sample sizes even for sample size of 50. Measurement models are assessed by testing the reliability of each item, converging validity and discriminant validity (Hair Jr. et al., 2010; Henseler et al., 2009). Each item was tested for reliability using Cronbach's alpha and composite reliability.

3. RESULTS AND DISCUSSIONS

Results

Table 1. Cronbach Alpha, Composite Reliability and Average Variance Extracted

VARIABLES	AVE	Cronbachs Alpha	Composite Reliability	Criteria
Innovation Capability (KI)	0.542903	0.856354	0.891515	Reliabel
Environmental Factor (FL)	0.690814	0.752547	0.817128	Reliabel
Product Innovation (InProd)	0.690894	0.776452	0.870143	Reliabel
Process Innovation (InPross)	0.664460	0.747187	0.855852	Reliabel

Base on Table 1 presents Cronbach's alpha and reliability ranging between 0.678 and 0.923. The practical rule used is that values higher than 0.6 indicate satisfactory reliability. The validity was used PLS tests convergent and discriminant validity. Convergent validity, was tested using Average Variance Extracted (AVE). Adequate convergence validity is indicated by the AVE value of at least 0.5. Table 1 shows adequate convergent validity, with AVE values of all variables more than 0.5. AVE can also be used to test discriminant validity. Discriminant validity can be assessed using two sizes : Fornell - Larcker's size and cross loading. Using Fornell - Larcker criterion, the discriminant value is calculated by comparing the square root of AVE with the latent variable correlation. The result is show in Table 2.

Table 2. Discriminant Validity of Latent Variable Correlations

VARIABLES	Innovation Capability (KI)	Environmental Factor (FL)	Product Innovation (InProd)	Process Innovation (InPross)
Innovation Capability (KI)	0.736820			
Environmental Factor (FL)	0.538410	0.831152		
Product Innovation (InProd)	0.616958	0.570760	0.831200	
Process Innovation (InPross)	0.561804	0.560583	0.632243	0.815144

Base on Table 2 show the discriminant validity is adequate if the square root of AVE along the diagonal is higher than the correlation between constructs. For both rows and columns, all AVE square roots are higher than diagonal. In addition, the measurement of discriminant validity through cross-loading indicates that all items must be larger than other constructions this is as shown in Table 3. Therefore, the results of reliability and validity statistics using PLS in each - each construct meets the requirements.

Table 3 . Loadings Factor

Indicator	KI	FL	IPD	IPS
X11	0.635099	0.323953	0.377593	0.367687
X12	0.733559	0.406217	0.438863	0.502597
X13	0.860993	0.459487	0.533358	0.403700
X14	0.702699	0.435719	0.447558	0.476272
X15	0.763197	0.384370	0.444130	0.408567
X16	0.804406	0.421409	0.478013	0.375873
X17	0.627873	0.320976	0.446788	0.339864
X21	0.474161	0.837811	0.468732	0.488546
X22	0.419966	0.824439	0.480360	0.442592
Y11	0.439503	0.510024	0.804547	0.510902
Y12	0.586151	0.490093	0.858086	0.551341
Y13	0.505936	0.419217	0.830105	0.512058
Y21	0.368871	0.457453	0.511425	0.787979
Y22	0.464461	0.481393	0.515399	0.822094
Y23	0.539380	0.430762	0.519152	0.834644

Inner model (inner relation or structural model) describes the relationship between exogenous latent variables to endogenous variables based on substantive theory. Inner value model or structural model is show in Figure 1.

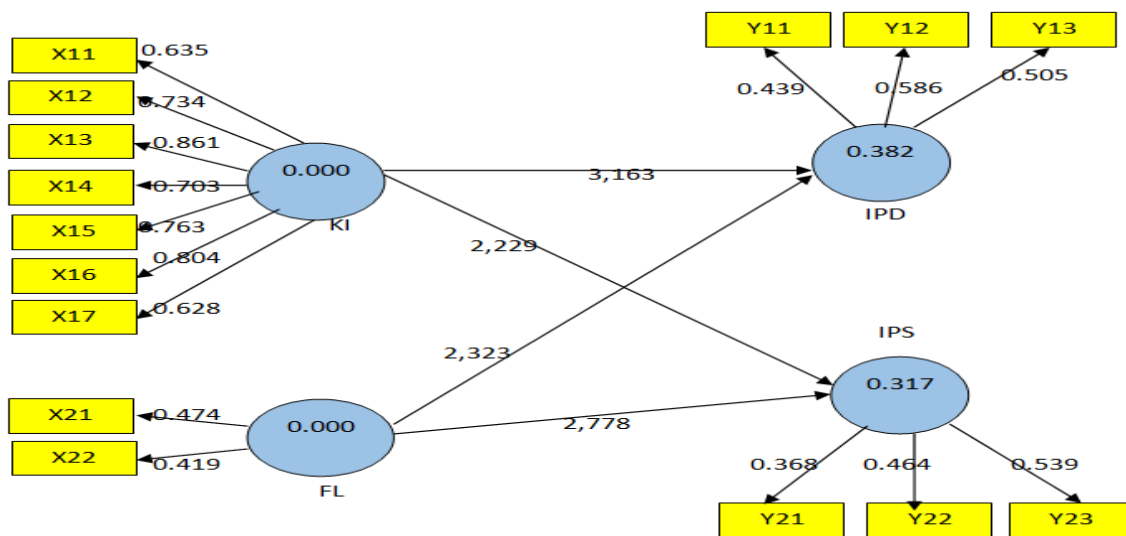


Figure 1. Inner Value Model or Structural Model

Base on Figure 1, the structural model is evaluated by using the Goodness of Fit Model. The Goodness of Fit Model is measured using R-square dependent latent variables. Stone-Geisser Q-Square predictive relevance to measure how well the observation value is generated by the model and also its parameter estimates. Q-square value > 0 indicates the model has predictive relevance; conversely if the value of -Square Q ≤ 0 indicates the model lacks predictive relevance. The magnitude of Q2 has a value with a range of 0 < Q2 < 1, where getting closer to 1 means that the model is getting better. The amount of Q2 is equivalent to the total determination coefficient in path analysis. Value of R-square is show in Table 4.

Table 4. Value of R-Square

Variables	R-Square
Innovation Capability (KI)	-
Environmental Factor (FL)	-
Product Innovation (InProd)	0.463663
Process Innovation (InPross)	0.425251

Base on [Table 4](#) shows that the sub 1 structural model obtained an R-square value of 0.463663 meaning that the Product Innovation variable (InProd) can be explained by the Innovation Capability variable (KI) and Environmental Factor (FL) of 46.37%. The sub 2 structural model obtained an R-square value of 0.425251 meaning that the Process Innovation variable (InPross) can be explained by the Innovation Capability variable (KI) and Environmental Factor (FL) of 42.53% are influenced by other variables which is not examined. Next is how well the observations produced by the model. The results of the calculation of Q-square value obtained by the results of 0.691740. The magnitude of Q2 has a value with a range of $0 < Q2 < 1$, where getting closer to 1 means that the model is getting better. The significance of the estimated parameters provides very useful information about the relationship between the research variables. The basis used in testing hypotheses is the value found in the result for inner weight output. To assess the significance of the prediction model in testing structural models, it can be seen from the t-statistics value between the independent variable to the dependent variable in the Path Coefficient table at the Smart output Pls. The limit for rejecting and accepting a hypothesis is proposed if the value of t counts \geq or \leq value of t table (n-k-1). Hypothesis testing will be done using the bootstrap method for the sample. Bootstrap testing is intended to minimize the problem of research data abnormalities. The test results with bootstrapping from PLS analysis are show in [Table 5](#). Then, continuing with hypothesis testing 1 as show in [Table 6](#).

Table 5. Result For Inner Weights

Hypothesis	Relationship	Indirect Effect Original Sample Estimate (O)	Total Effects Original Sample Estimate (O)	T-Statistics (O/STERR)	Conclusion
H1	KI -> IPD		0.390735	3.16245	Accepted
H2	KI -> IPS		0.259642	2.228346	Accepted
H3	FL -> IPD		0.303115	2.322374	Accepted
H4	FL -> IPS		0.286274	2.777093	Accepted

Table 6. Hypothesis Testing 1

Hypothesis	Relationship	Indirect Effect Original Sample Estimate (O)	Total Effects Original Sample Estimate (O)	T-Statistics (O/STERR)	Conclusion
H1	KI -> IPD		0.390735	3.16245	Accepted

Base on [Table 6](#) show the results of testing the first hypothesis indicate that the variable relationship of Innovation Capability (KI) to Product Innovation (InProd) shows the value of the path coefficient (Total Effects) of 0.390735 with a value of t count of 3,16245. This value is greater than t table 1.960. This result means that Innovation Capability (KI) has a positive and significant relationship to Product Innovation (InProd). Thus Hypothesis 1 is accepted. The result of hypothesis testing 2 is show in [Table 7](#).

Table 7. Hypothesis Testing 2

Hypothesis	Relationship	Indirect Effect Original Sample Estimate (O)	Total Effects Original Sample Estimate (O)	T-Statistics (O/STERR)	Conclusion
H2	KI -> IPS		0.259642	2.228346	Accepted

The results of testing the second hypothesis show that the variable relationship of Innovation Capability (KI) to Process Innovation (InPros) shows the value of the path coefficient (Total Effects) of 0.259642 with a t value of 2.228346. This value is greater than t table 1.960. This result means that Innovation Capability (KI) has a positive and significant relationship to Process Innovation (InPros). Thus hypothesis 2 is accepted. The result of hypothesis testing 3 is show in [Table 8](#).

Table 8. Hypothesis Testing 3

Hypothesis	Relationship	Indirect Effect Original Sample Estimate (O)	Total Effects Original Sample Estimate (O)	T-Statistics (O/STERR)	Conclusion
H3	FL -> IPD		0.303115	2.322374	Accepted

Base on [Table 8](#), the results of testing the three hypothesis indicate that the variable relationship of environmental factor (FL) to Product Innovation (InProd) shows the value of the path coefficient (Total Effects) of 0.303115 with a value of t count of 2,322374. This value is greater than t table 1.960. This result means that environmental factor (FL) has a positive and significant relationship to Product Innovation (InProd). Thus Hypothesis 3 is accepted. The result of hypothesis testing 4 is show in [Table 9](#).

Table 9. Hypothesis Testing 4

Hypothesis	Relationship	Indirect Effect Original Sample Estimate (O)	Total Effects Original Sample Estimate (O)	T-Statistics (O/STERR)	Conclusion
H4	FL -> IPS		0.286274	2.777093	Accepted

Base on [Table 9](#), the results of testing the four hypothesis indicate that the variable relationship of environmental factor (FL) to Process Innovation (InPros) shows the value of the path coefficient (Total Effects) of 0.286274 with a value of t count of 2.777093. This value is greater than t table 1.960. This result means that environmental factor (FL) has a positive and significant relationship to Process Innovation (InPros). Thus Hypothesis 4 is accepted.

Discussion

The main objective of this research is to see the effect of innovation capability on product innovation and process innovation. This main objective was inspired by previous research who found that the application of innovation capabilities to innovation produces mixed results ([Martinez-Roman et al., 2015](#)). The results of this study support previous research that the innovation ability of SMEs has a positive and strong impact on innovation efforts who prove that there is a positive and significant relationship between innovation capability affecting product innovation and process innovation ([Calantone et al., 2002](#); [Lawson & Samson, 2001](#); [Rajapathirana & Hui, 2018](#)). This is in contrast to the opinion expressed that innovation capability has a positive effect on product innovation, but has a significant negative effect on process innovation ([Martinez-Roman et al., 2015](#)). Innovation capability has a strong and significant impact on product innovation and process innovation. This understanding is very important because innovation capability is one of the influential factors to develop innovation activities within the company.

Knowledge sharing, human factors, and organizational factors are indicators of innovation capability that will lead to a clear and effective understanding of the innovation strategy. An organizational culture that prioritizes innovation and an organization supported by the right people, the process will provide a way to create various ideas, especially turning them into profitable business concepts. Likewise, the effective scale of new business ideas supporting them with the right levels and types of resources requires creating excellent ideas and successfully commercializing them. Therefore, innovation capability provides insight into the innovation potential for MSMEs and assets, leading to the identification of strengths or weaknesses, where MSMEs grow and develop ([Amri, 2020](#); [Larasati, 2022](#)). For this reason, innovation capabilities are needed components to develop effective innovation outcomes in MSMEs to enable the application of resources and continuous transformation of knowledge and skills into product innovation and process innovation to provide benefits to stakeholders. The innovation

capability of MSMEs is responsible for producing highly creative innovations. Another important result of this research is that environmental factors have a positive and significant effect on product innovation and process innovation. The results showed that environmental factors were positively related to product innovation and process innovation. The results of this study are in line with the study that state environmental factors are important drivers for innovation, both product innovation and process innovation (Hurley & Hult, 1998; Martinez-Roman et al., 2015). This shows that increasing the innovation capability of the company will encourage better innovation performance. Likewise, when SMEs pay attention to environmental factors, they will produce successful product innovations and process innovations so that they can facilitate better product development and marketing activities for SMEs. MSME environmental factors can be considered through the level of competitive competition in the industry and policies from the government (Arifin, 2020; Mitussis, 2010). One of the ways to anticipate this is by creating innovation in its business. For example, MSMEs must be able to create new strategies on an ongoing basis in order to appear different in the face of competitive levels of competition. MSMEs should be more observant in looking at the policies made by the government. The innovation process in MSMEs can be improved through the readiness of MSMEs themselves, both internal and external readiness.

The Covid-19 pandemic has changed consumer behavior and the map of business competition that business actors need to anticipate due to activity restrictions. Consumers do more activities at home by utilizing digital technology. Meanwhile, the changing industrial landscape and the new competition map are marked by four business characteristics, namely Hygiene, Low-Touch, Less-Crowd, and Low-Mobility (Amri, 2020; Pakpahan, 2020). Companies that are successful in the pandemic era are companies that can adapt to these 4 characteristics. That way, business actors including MSMEs need to innovate in producing goods and services in accordance with market needs. They can also develop various new business ideas that can also contribute to solving the socio-economic problems of the community due to the impact of the pandemic (social entrepreneurship). One form of government support is by providing incentives for MSMEs through the National Economic Recovery (PEN) program. The government hopes that the PEN program can encourage MSMEs to recover during this pandemic. The PEN program to support MSMEs was noted to have succeeded in providing support for the business world, especially for the informal sector and MSMEs to survive the impact of the pandemic (Antosova & Csikosova, 2016; Jurado et al., 2019). In addition, it can also help in suppressing the decline in the workforce. The government also continues to encourage MSME actors to go on board to digital platforms through the Proudly Made in Indonesia National Movement Program (Gernas BBI), where by the end of 2020 there have been 11.7 million MSMEs on board. It is hoped that by 2030, the number of MSMEs that go digital will reach 30 million. In addition, the Government also encourages the expansion of exports of Indonesian products through ASEAN Online Sale Day (AOSD) activities in 2020.

Most of the MSMEs in Indonesia are still MSEs who are still in the informal sector, so they need to be encouraged to transform into the formal sector. Indonesia also still has complicated licensing problems with many central and regional regulations or hyper-regulations governing licensing in various sectors that cause disharmony, overlap, non-operational and sectoral. Therefore, the Government is trying to accommodate this through the preparation of the Job Creation Law which was ratified in 2020. One of the substances regulated in the Job Creation Law is about the convenience, protection, and empowerment of MSMEs. The government hopes that through the Job Creation Law, MSMEs can continue to develop and be competitive. In principle, the Government has prepared various programs and policies both in the context of the National Economic Recovery as well as several programs that in the future we hope can really provide convenience, protection and empowerment for MSMEs.

The implication of this study providing overview related to clear innovation capability is a key strategy that must be driven by a company's long-term growth and profitability and is indispensable for the survival of the organization. Having greater relevance for managers in a competitive context given the importance of developing and implementing innovations with the company's business strategy and having a clear understanding of important innovations which deliberately explain themselves to be implemented through strategic practices. Like other empirical studies, this study also has limitations. This will help to study the future and be able to make improvements in this field. First, this study measures innovation capability which only focuses on MSMEs, there are many other businesses. Second, this study only measures from the perspective of MSME owners/managers; still have to measure from the consumer's point of view. Future research requires various aspects that affect innovation capabilities such as market orientation and technology orientation. Some of the valuable findings of this study reveal that it can be applied to other industrial sectors.

4. CONCLUSION

This research was conducted to determine and understand the influence of innovation capability, environmental factors and innovation on MSMEs in Ogan Komering Ulu Regency. The findings of this study support that companies that have high innovation capabilities and that pay attention to environmental factors have a positive effect. This finding also helps that improving innovation capability is the responsibility of MSMEs as the basis for defining successful innovation. MSMEs need to take advantage of sources of innovation, access creative ideas from employees, customers, investors and partners, which, in turn, will require aggressive leadership.

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