Technology Capabilities and Innovation Ambidexterity Impact on MSME Business Resilience during Covid-19 Pandemic in Bandar Lampung

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Abstract

This study analyses the impact of technology capabilities and innovation ambidexterity on the MSMEs business resilience. Structural Equation Modelling was used as an analytical technique involving 400 MSMEs in Bandar Lampung that were selected using a simple random sampling technique. This study employs a quantitative approach by distributing a six-point questionnaire on a Likert scale with 33 questions. The results showed that technological capabilities and innovation ambidexterity had a positive and significant effect on the business resilience. Furthermore, technology capabilities also have a positive and significant impact on innovation ambidexterity. Innovation ambidexterity plays a mediating role in the relationship between technological capability and business resilience. This research can serve as information for MSME owners to enhance their business resiliency. In addition, this research may also provide insight into technology capabilities, innovation ambidexterit, and business resilience.

Keywords
Business Resilience, Technology Capability, Innovation Ambidexterity, Covid-19, MSMEs.

1. Introduction
Micro, Small, and Medium Enterprises (MSMEs) are the largest group in the Indonesian economy, which have proven to be safety valves for the economy during times of crisis as well as being a dynamic and stabilizer for the economy after the crisis. MSMEs are on forefront of the industrial sector that has suffered the economic shocks caused by the COVID-19 pandemic. Efforts to break the COVID-19 chain have abruptly halted economic activity, resulting in reduced demand and disrupted supply chains worldwide (Thaha, 2020). Because of its resilience in facing various economic crises and opening up employment opportunities and its large contribution to the economy, the development and role MSMEs need to be continuously improved (Gunartin, 2017). But in reality, MSME is facing a challenging time with the emergence of the global COVID-19 pandemic that is affecting the weakening global economy. The global economic situation worsened after a rise in COVID-19 cases in America, Italy, and Spain (Thaha, 2020).

Based on the results of their research, Sullivan-Taylor & Branicki (2011) stated that small firms have an advantage in maintaining their operations over large firms. This is because small businesses can make decisions faster and shorter, whereas large businesses have a lot of bureaucracy that can prolong decision-making. According to the International Organization for Standardization (2017) business resilience is the ability of an organization to adapt the environment to enable an organization to deliver goals, survive and develop (Bell, 2019). Resilience is the ability of an individual or organization to recover quickly from failures, mistakes or barriers encountered and the ability to adapt to various challenges. This can occur because the individual or organization has a growth mindset, so that they are able to face obstacles by exploring alternative solutions to solve the problems at hand (Chowdhury et al., 2019). The innovation ambidexterity is the ability of an organization to simultaneously harness and explore innovation (O'Reilly & Tushman, 2013). Keeh et al., (2007) have indicated that innovation is related to technology development. Technology is undergoing a very rapid change which encourages the emergence of new products, processes and services from competitors who require a company to adapt to innovation and technology.

The city of Bandar Lampung as the capital of the province of Lampung makes it the center of government as well as the center of commerce and service distribution. According to data from the Bandar Lampung City Cooperatives Small and Medium Enterprises office, the number of micro, small and medium-sized businesses in

Bandar Lampung City in 2019 reached 51,709 units, with 30,696 units of micro businesses, 15,568 units of small businesses, and 5,445 units of medium enterprises, spread across 20 sub-districts in Bandar Lampung. The Lampung Province Cooperatives and Micro, Small and Medium Enterprises (MSMEs) Office said that the phenomenon of the COVID-19 pandemic has had a significant and varied impact on MSMEs, especially in the city of Bandar Lampung which is the center of all activities in this province. The global COVID-19 pandemic also led to slower economic growth in Lampung province. In the second quarter of 2020, the national contraction of minus 5.32 percent and of the province of Lampung in the second quarter of 2020 experienced a contraction of 3.57 percent (Oktaria, 2020). The Head of the Lampung Province Cooperatives and Micro, Small and Medium Enterprises (MSMEs) Office said that cooperatives and MSMEs must be able to develop technology and prepare themselves for future developments, not only because of the current global pandemic. MSMEs should also consider their human resources in terms of technological capacity. Cooperatives and MSMEs must be aware of and understand technology development and the digital world in order to promote products (Oktaria, 2020). In addition, the Head of the Lampung Tourism and Creative Economy Office, Edarwan, said that adaptation, innovation and collaboration are considered to be the keys to accelerating the recovery of MSMEs k(Oktavia, 2021). However, there are still many MSMEs in Bandar Lampung City that have not used the internet and technology. Based on the results of a survey conducted by Yulia (2020) it shows that as many as 49.27% of MSMEs in Lampung Province have not utilized the internet and technology. In addition, 56.50% of MSMEs in Bandar Lampung City had done online marketing before the pandemic, 7.72% had just done online marketing after the pandemic, and another 35.77% had not done online marketing. This study aims to determine the factors that influence the resilience of MSME businesses due to the technological capabilities and the innovation ambidexterity. The foundation of this research is based on the occurrence of the pandemic COVID-19 phenomenon, which has a significant life-cycle influence, in particular MSMEs.

This research consists of the following six sections: The first section is an introduction to the background of this research. The second section discusses the literature and theoretical review by developing assumptions based on the proposed conceptual model. The third section describes the research approach to this study, which includes collecting samples and data, measuring and analyzing data. The empirical findings and discussion of the study are presented in fourth and fifth section. Finally, section sixth provides conclusion and recommendations.

2. Literature Review

A. Technology Capability, Ambidexterity Innovation, Business Resiliance

Technological capability is an ability and knowledge that can be used as a guide for operating technology in a production system or the ability to change by innovating technology (Lau et al., 2010). Yam et al. (2011) said technological capabilities include the ability of business actors to produce, disseminate and take advantage of technology innovations with economic value. Companies with greater technology capabilities are capable of achieving higher levels of organizational performance and efficiency. Information technology infrastructure capability is the ability of a company to deploy the platform it uses, the ability that captures the extent to which the company is successful in managing the data management architecture and services, network communication services, and application services and portfolios (Lu & Ramamurthy, 2011). Lu & Ramamurthy (2011) suggested several dimensions in technological capability, namely: Technology Infrastructure Capability (Technology Foundation), Technology Business Development Capability (Technology Business Strategic Thinking and Partnerships), and a Proactive Attitude towards Technology (Opportunity Orientation).

Darmanto & Wardaya (2016) said that innovation is the result of developing knowledge combined with the experience and skills possessed to create changes in a product or process where these changes have value that can be provided to customers. Moreover, according to O'Reilly & Tushman (2013), ambidexterity refers to an organization's capacity for exploration and operation. The innovation ambidexterity, according to Chiu et al. (2011) is the company's ability to simultaneously pursue and harmonize exploration and exploitation innovations. Birkinshaw & Gibson (2004) said that innovation ambidexterity is an activity in organizations that includes strategies to utilize knowledge in the production process to meet consumer demands while exploring and learning to adapt to environmental uncertainties by considering current and long-term subsistence. Innovation ambidexterity is an activity designed to leverage existing skills to create additional innovations from existing products and processes and to explore new opportunities to encourage radical innovation (Andriopoulos & Lewis, 2009). There are two dimensions to ambidexterity-based innovation which are exploratory innovation and exploitation-based innovation. Exploration and exploitation innovation are activities that are inter-related (Chang & Hughes, 2012). Exploratory innovation is an innovation that focuses on new knowledge and creative insights that can be developed through experimentation and discovery, while exploitative innovation is built on existing knowledge through gradual improvement (Chang & Hughes, 2012). Exploitative innovation has the aim of increasing efficiency in the short term, and increasing current income, while exploratory innovation increases

competitiveness in the long run, and increases future income (March, 1991). The company's ability to carry out exploitation can increase exploration which will have an impact on the company's long-term performance (Wiratmadja et al., 2020). Companies that are able to simultaneously take advantage of existing competencies and explore new opportunities have good competitiveness (Wiratmadja et al., 2020). Thus, it also affects business resilience.

According to Zohuri & Moghaddam (2018), business resilience is the capacity of a system or organization to maintain certain functions or processes when constraints that may affect the business occur. Business resilience is a characteristic of an individual or organization that focuses on individual, organizational and institutional factors which are the result of entrepreneurial behaviour (Korber & McNaughton, 2018). Saputra et al. (2020) said that resilience is the ability to be able to recover in a short time from failures, mistakes, or setbacks as well as the ability to adapt to various difficulties faced by individuals or organizations. Resilience is possible because the individual or organization has a growth mindset that puts pressure on to overcome barriers by finding solutions to ongoing issues (Chowdhury et al., 2019). Resiliency within an organization or company is a capability that determines an organization's or company's capacity to recognize and seize opportunities (Branicki et al., 2018). There are several dimensions to business resilience, namely network and infrastructure, knowledge and capabilities, additional resources, regulations and policies, as well as self-monitoring performance.

Based on studies by Soto-Acosta et al. (2018), technological capabilities have a positive impact on the innovation ambidexterity. Technological capabilities can increase capacity utilization by taking advantage of existing opportunities and exploring new opportunities to respond to market challenges. Research by Zang & Li (2016) shows that technological capabilities and marketing capabilities have an inverse U-shape relationship with innovation ambidexterity, where they can complementarily improve innovation proficiency, which further improves organizational performance. A companies must be able to make adjustments to exploratory and exploitative innovations to catch up with very rapid technological developments (Wiratmadja et al., 2020). The hypotheses presented in this study are therefore:

H1. The technological capability has a positive significant effect on innovation ambidexterity in MSMEs.
Wardi et al. (2017) stated that small and medium-sized enterprises can survive a poor business environment by adapting to market dynamics and rapid technological change. Oh & Teo (2006) found that high-quality and proactive management IT capabilities greatly enhance business resilience. Research conducted by Bustinza et al. (2016) also supports the relationship between technological capability and business resilience, where the survey results show a positive influence between technological capability and business resilience. The following are the hypotheses proposed in the current study:

H2. Technological capability has a positive significant effect on business resilience in MSMEs.

Based on their research, Lv et al. (2018) indicates that managing innovation can enhance the resilience of an organization. A study from Iborra et al. (2019) demonstrate a positive relationship between business resilience and innovative ambidexterity. MSMEs that generally have greater difficulty in preventing and planning are able to survive and recover from threatening events and external stress through ambidexterity and strategic coherence capabilities. The findings of Onwughalu & Amah (2017) show that the dimensions of ambidexterity, exploration and exploitation demonstrate an important relationship with business resilience. This shows that organizations operating today must adopt exploratory and exploitative strategies so that they can effectively take advantage of current competencies and be in a strategic position to take advantage of opportunities in the business environment to remain competitive and elastic. Therefore, the hypotheses suggested in this study are:

H3. Innovation ambidexterity has a positive significant effect on business resilience in MSMEs.

Keeh et al. (2007) said the innovation is linked to technological development. Technology is changing very quickly, encouraging the emergence of new products, processes and services from competitors who require a business to adapt to innovation and technology. In their research, Bustinza et al. (2016) stated that technological and innovation capabilities are closely linked. Innovation is the main competitive feature and companies with technological capabilities are capable of creating innovations. Technological capabilities reduce innovation risks and facilitate the introduction of new products or services into the market place. Thus, the hypotheses proposed in this study are:

H4. Innovation ambidexterity a positive significant effect in mediates technological capability and business resilience.

3. Methodology

A. Sampling and Data Collection

The population covered by this study was all micro, small and medium-sized enterprises (MSMEs) in the city of Bandar Lampung, with a total of 51709 MSMEs. The researchers used the simple random sampling technique to determine the research sample. The number of respondents to this study was derived from the Slovin formula with a sample of 400 respondents. Slovin's formula is used because in sampling the number must be representative so that the research results can be generalized and the calculation does not require a table of the number of samples (Sugiyono, 2011). This research was carried out from March to April 2021 using a cross-sectional questionnaire survey design. Among all respondents, 54% were men, while 46% were women. While the average age of all respondents is 2.3% of whom are <20 years old, 31% are 21-30 years old, 27% are 31-40 years old, 29.5% of them are 41-50 years old, and 10.3% the rest were> 50 years old. The educational background of the majority of respondents is high school with 43%, Bachelor (S1) as much as 29%, Diploma as much as 19.5%, S2 / S3 as much as 3.5% and the other 5% have other educational backgrounds. Meanwhile, from the time the business was established, 17% had been established since <1 year, 61.3% had been around for 1-5 years, 12% had been around for 6-10 years, and 9.8% had been around for> 10 years.

B. Measurement

The measurement scale used for this research is the Likert scale. The Likert scale is used to gauge an individual's opinion or perception of predetermined variables (Sugiyono, 2018). The construct measurement uses a six-point Likert scale ranging from 1 (strongly disagree) to 6 (strongly agree). The survey uses Bahasa Indonesia to assist respondents in understanding the content of the survey. This study uses 14 items from the questionnaire to measure technological capability, 9 items from the questionnaire to measure innovation ambidexterity and 10 items from the questionnaire to measure business resilience. In this study, questionnaire items were obtained from previous research. The questionnaire items used to measure technological ability refer to research conducted by Lu & Ramamurthy (2011). This study also uses the innovation variable ambidexterity as a mediator variable which refers to the research of Acosta et al. (2018). As for business resilience, referring to research by Aldianto et al. (2021). The authors conducted a pilot test by distributing questionnaires to 30 respondents for a validity test. The validity test was performed using the Pearson Correlation at a significance level of 5% (a = 0.05) and the Table R value of 0.361. The question item is considered valid if Rcount ≥ Rtable. The results of data processing show that 32 questionnaire items have a correlation value that greater than 0.361 to declared valid and one questionnaire item that has a Rcount value < 0.361 that not valid and then, the item is not used in further data processing. For realibility test, this study uses Cronbach's Alpha technique that commonly used for reliability testing. In order to demonstrate that the questionnaire is reliable, the Cronbach alpha must be greater than 0,7. Data processing results show that the reliability count of each variable is > 0.70, which can be declared as reliable.

C. Data Analysis

This study uses the Partial Least Square (PLS-SEM) to test the proposed design model. Ghozali (2008) states that SEM (Structural Equation Modeling) is a multivariate analysis technique that can be used to test the relationship between complex variables both recursive and non-recursive to obtain a comprehensive picture of the overall model. Using SEM, researchers are able to test structural and measurement models as well as measurement errors and factor analysis along with hypothesis testing (Bahri & Zamzam, 2015). This study performs a bootstrap algorithm with 400 samples of MSME owners to estimate the significance level of the path coefficient.

4. Results

Partial Least Square (PLS) is an variance-based SEM that is capable of managing path patterns with reflective constructs (Bahri, 2018) that suitable for this research. PLS - SEM analysis is carried out in two stages consisting of evaluation of the measurement model (outer model) by measuring the value of convergent validity, discriminant validity, Cronbach's Alpha and Composite Reliability and the structural model (inner model) by measuring the R-square and the Path Coefficient or T-Values.

A. Model Measurement Results (outer model)

Convergent validity is obtained by considering the reliability of the element indicated by the loading factor value. The loading factor is a number that indicates the correlation between the score of a question item and the score of the indicator that measures the concept. According to Ghozali & Latan (2014), the value of valid loading factor to be the declared as valid should be higher than 0.7.

Tabel 1. Table Loading Factor, Cronbach's Alpha, Composite Reliability, and Convergent Validity

Variabel	Indikator	*Loading Factor*	*Cronbach's Alpha*	*Composite Reliability*	AVE
Technological Capability (TC)	TC1	0.758	0.922	0.934	0.587
	TC3	0.738			
	TC5	0.806			
	TC6	0.771			
	TC7	0.772			
	TC8	0.776			
	TC9	0.813			
	TC10	0.709			
	TC12	0.761			
	TC14	0.754			
Innovation Ambidexterity (IA)	IA2	0.721	0.838	0.881	0.553
	IA3	0.738			
	IA4	0.723			
	IA5	0.789			
	IA6	0.727			
	IA7	0.760			
Business Resiliance (BR)	BR1	0.825	0.803	0.872	0.630
	BR2	0.842			
	BR3	0.776			
	BR10	0.727			

The measurement model is valid if it has a Cronbach Alpha value and composite reliability above 0.7 (Latan & Ghozali, 2012). The validity of the measurement model based on value from the extracted variance means (AVE) that have a value of > 0.5 (Latan & Ghozali, 2012). The results of the validity and reliability test for this study are presented in Table 1. The test results show an outer loading value between 0.709 and 0.842. In addition, Cronbach's Alpha and Composite Reliability scores are greater than 0.7 for all constructs. This can be interpreted that, the scale of this study is therefore reliable. Meanwhile, all dimensional variables have an AVE level greater than 0.5, indicating that the construct has a good level of validity. The measurement of discriminant validity will be carried out using multicollinearity (VIF). Multicollinearity measurement is used to prove whether reservation between constructs is strong or otherwise. Diamantopoulos & Winklhofer (2001) suggest that the external multicollinearity model (VIF) must have a value <10 that indicates the absence of multicollinearity. Based on the test results, it indicates that all elements have a value of <10, which explains why multicollinearity is not present in this study.

Discriminant validity was tested in both indicators and latent variables. In discriminant validity, there is no indicator that gives a higher loading to the latent variable than the latent variable that should be, this is also called cross loading (Santosa, 2018). A high discriminant validity value indicates the uniqueness of a concept. To test the validity of the discriminant, it can be done by looking at the cross loading value for each variable where the cross loading value must be more than 0.70. Discriminant validity testing can also be done by comparing the square root of the AVE in each construct with the correlation value between constructs in the model (Latan & Ghozali, 2012). Discriminant validity is used to evaluate the discriminant validity of the research instrument. The criteria used are the Fornal-Larcker criteria. The value of the Fornel-Larcker criteria for each construction must be above the highest square correlation value with other constructions (Leguina, 2015).

Tabel 2. Table Fornell-Larcker Criterion Testing Results

	IA	BR	TC
IA	**0.744**		
BR	0.767	**0.794**	
TC	0.776	0.769	**0.766**

Test results show that the average cross loading value exceeds the loading value. All elements in each variable have a value above 0.7 which indicates that each element is valid. The results presented in Table 2 show the value of the square root of AVE in diagonal row. It also showed the values below are the correlation values between constructs. Based on the results obtained, this result shows that the square root value of AVE is higher than the correlation value of other constructs, thus it can be concluded that the research model met the criteria.

Measurement of discriminant validity can additionally use measurements with Heteroite-Monoroite Ratio (HTMT). The Heteroite-Monoroite Ratio (HTMT) values are presented in Table 3.

Tabel 3. Table Heterotraite-Monotraite Ratio (HTMT) Testing Results

	Original Sample (O)	Sample Mean (M)	2.5%	97.5%
BR -> IA	0.934	0.934	0.863	0.993
TC -> IA	0.880	0.879	0.788	0.953
TC -> BR	0.887	0.888	0.819	0.943

The HTMT analysis was used to detect a lack of discriminant validity in general research situations (Wiratmadja et al., 2020). According to Henseler et al. (2015) if the HTMT value is <0.90, then a concept has good discriminant validity. In addition, Henseler et al. (2015) also stated that as a statistical test, the bootstrap procedure is possible to construct a confidence interval for HTMT where the HTMT value as a statistical test with a value of 1 is outside the interval range. This study used the second method as the HTMT assessment criteria. Table 3 shows that HTMT in this study fulfills the requirements of discriminant validity, which indicates that the two constructs are empirically different.

A. Structural Model Results (Inner model)

Figure 1 shows the structural model in this study. The results of the structural model trial comprise three types of assessment. The results of the structural model trial comprise three types of assessment. These assessments include the R-square, predictive relevance and path coefficient. The R-Square results show that the Innovation Ambidexterity has an R-Square value of 0.602 and the Business Resilience has an R-Square value of 0.665. According to Ghozali & Latan (2014) if the R-Square value is 0.67 it identifies that the model is strong, if R-Square is 0.33 then the model identifies moderate and if R-Square is 0.19 it identifies that the model is weak. Based on the test results, the Innovation Ambidexterity and Business Resilience variable are a moderate model as the R-Square is greater than 0.33.

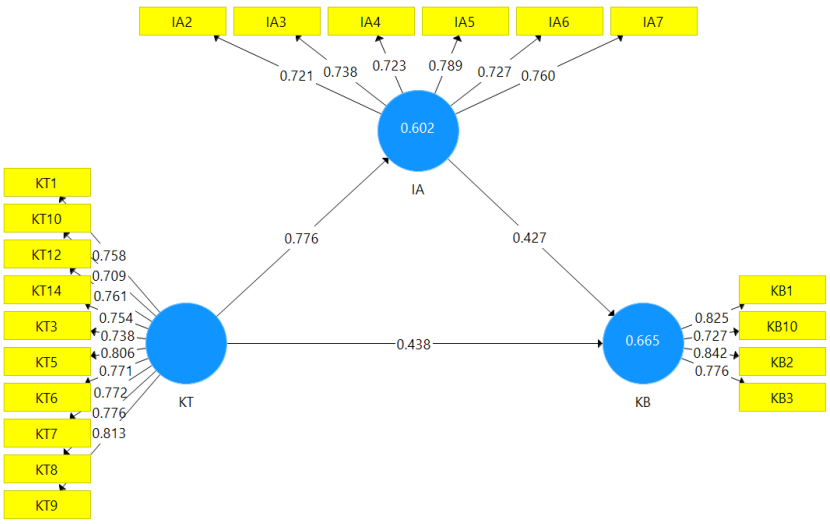

Figure 1. Figure Structural Model

Tabel 4. Table *R-square*

Variabel	*R Square*
Inovation Ambidexterity	0.602
Business Resiliance	0.665

In addition to carrying out the R-Square test, it will be continued to test the F-Square which allows to assess the relative impact of an influencing (exogenous) variable on the affected (endogenous) variable. Based on research

by Hair et al. (1998) there is a criterion of the value of the F-Square effect which represents the small effect of exogenous variables on endogenous variables. The value of the effect <0.02 represents the minor effect of the exogenous variables on the endogenous variables. The effect size <0.15 represents the moderate level of the effect of exogenous variables on endogenous variables and finally the effect size <0.35 represents the magnitude of the effect of exogenous variables on endogenous variables.

Tabel 5. Table *F-square*

	IA	BR	TC
IA		0.217	
BR			
TC	1.511	0.228	

Based on the results of the F-Square test, the F-Square effect size of the relationship between Innovation Ambidexterity and Business Resilience is 0.217 (Substantial/Good Model), the relationship between Technological Capability and Innovation Ambidexterity is 1.511 (Substantial/Good Model), and the relationship between Technological Capability and Business Resilience is 0.228 (Substantial/Good Model).
The final data processing which be used is the blindfolded analysis. Blindfolding is an analysis used to evaluate the level of suitability of a construction model. This blindfolding process is depicted in the form of a Q-Square. If the value of Q-Square > 0 then the variable can be seen as having good relevance and the exogenous variable is able to predict the endogenous variable. The Q-Square value is divided into three criteria, including if Q-Square <0.02 (small), Q-Square <0.15 (moderate) and Q-Square <0.35 (large). Based on table 6, the Q-Square value for endogenous variables is obtained, namely Innovation Ambidexterity and Business Resilience. The findings show that the Innovation Ambidexterity and Business Resilience models are highly predictive.

Tabel 6. Table Q-Square Results

	SSO	SSE	Q^2 (=1-SSE/SSO)
IA	2400.000	1619.072	0.325
BR	1600.000	941.657	0.411
TC	4000.000	4000.000	

Based on the results of the Path Coefficients test in Table 7, it is stated that Technological Capability has the greatest influence on Business Resilience of 0.438, followed by the Innovation Ambidexterity for Business Resilience of 0.427. Technological capability also positively affects innovation ambidexterity by 0.776. Additionally, technological capability towards business resilience through innovation ambidexterity has a positive value of 0.331.

Tabel 7. Table Path Coefficients Results

Variable	*Path Coefficients*
TC -> IA	0.776
TC -> BR	0.438
IA -> BR	0.427
TC-IA -> BR	0.331

A. Hypothesis Testing Results

In this study, the researchers bootstrapped 400 subsamples to find the value of T-stats and P-values. The value of T-statistics and P-values from the study is presented in Table 8.

Tabel 8. Table T-Statistic Results

Hypothesis	Variable	*T-Statistic*	*P Value*	Pronouncement
H1	**Technology Capability → *Ambidexterity Innovation***	20.361	0.000	Do Not Reject
H2	**Technology Capability → Business Resiliance**	6.946	0.000	Do Not Reject
H3	***Ambidexterity Innovation* → Business Resiliance**	6.015	0.000	Do Not Reject
H4	**Technology Capability → *Ambidexterity Innovation* → Business Resiliance**	6.053	0.000	Do Not Reject

Using the results of the hypothetical tests presented in Table 8, it shows that all hypotheses are accepted. The hypothesis test accepted at 5% importance has a value greater than 1.96 (Ghozali and Latan 2014). The approximate value for the T-statistic at the 5% significance level is 1.96 (Hair et al., 2014). For P values, the significance level of 5% of P values has to be less than 0.05 (Hair et al., 2014) .

5. Discussion

The objective of this study is to determine the impact of technological capabilities and innovation ambidexterity on MSMEs. This study also examines the role of the innovation ambidexterity as a mediator variable between technological capabilities and business resilience. The findings show that the conceptual model proposed in this study is relevant for explaining the resilience of firms in MSMEs. The results of the measuring model indicate that this study is valid and reliable. At the same time, using the results of the structural model measures, it shows that the four proposed assumptions are acceptable.

Hypothesis 1 in this study shows that technological capability has a significant and positive effect on innovation ambidexterity. These results indicate that the greater the technological capabilities of micro, small and medium-sized enterprises (MSMEs), the more innovative their ambidexterity will be. The results of these findings are similar to the research conducted by Soto-Acosta et al. (2018) which shows that technological capabilities have a positive impact on innovation ambidexterity. Soto-Acosta et al. (2018) stated that by aligning technological capabilities with other significant resources, it can enhance business innovation. The results from this study can be compared to the results found by Zang & Li (2016) who argues that technology and marketing capabilities have an inverse U-shaped relationship with innovation ambidexterity. Zang & Li stated that this variable can complement innovation prowess, which in turn enhances the performance of the organization.

Hypothesis 2 of this study indicates that technological capability has a significant positive effect on business resiliency. This means that the greater the technological capability of microenterprises and small and medium-sized enterprises (MSMEs), the greater their business resilience. These results are consistent with research conducted by Wardi et al. (2017) which argues that MSMEs can survive a poor business environment by adapting to market dynamics and high-speed technological change. The same results were also found in the research of Oh & Teo (2006) which found that high-level and proactive managerial and high-level information technology capabilities can significantly increase business resilience. Research conducted by Bustinza et al. (2016) support findings that suggest the relationship between technology capability and business resilience. Resilience in the context of technological change creates the capacity within the company to implement strategic decisions that are better technology-related, recover quickly, and can reduce the effect of dysfunction on organizational effectiveness.

According to Hypothesis 3 of this study, innovation ambidexterity has a significant positive effect on business resilience. Based on these results, the greater the innovation ambidexterity held by Micro, Small and Medium Enterprises (MSMEs), the more resilient the business. These findings resemble the research conducted by Lv et al. (2018) which say innovation management can enhance an business's resilience. A resilient business is always able to maintain high performance and renew itself over time through innovation. Iborra et al. (2019) also shows research that demonstrates a positive relationship between business resilience and the innovation ambidexterity. MSMEs, which generally have more difficulty in prevention and planning, are able to survive and recover from threatening events and external stress by relying on their ability of ambidexterity and strategic consistency. Moreover, research results from Onwughalu & Amah (2017) also reveal that the dimensions of ambidexterity, which are exploration and exploitation, show an important relationship to business resilience. This shows that organizations operating today must adopt exploratory and exploitative strategies so that they can effectively take advantage of current competencies and be in a strategic position to take advantage of opportunities in the business environment to remain competitive and flexible.

Hypothesis 4 of this study proves that the innovation ambidexterity acts as an moderating variable between the technological capability and business resilience. Therefore, the greater the technological capability of micro, small and medium enterprises (MSMEs), the greater the innovation in terms of ambidexterity. This hypothesis resembles the research carried out by Bustinza et al. (2016) stated that there is a strong relationship between technological and innovation capabilities. Innovation is the primary characteristic of competition and firms with technological capabilities are able to create innovations. Technological capability reduces the risks associated with innovation and facilitates the introduction of new products or services to markets.

The results showed that most of the respondents were men of different ages. Respondents were dominated by the 21-30 age group, which is the productive age of a person who works or runs a business. Based on the

educational background, it can be concluded that the most recent education of the majority of respondents is high school with the majority of businesses engaged in providing accommodation and providing food and drink. In this study, the majority of businesses have been established for 1-5 years with an average number of employees of 1-4 people and the majority have an income of <300 million per year.

6. Conclusion and Recommendation

Based on the results of the study, this study assumes that the owners of MSMEs in Bandar Lampung must increase their knowledge of the use and development of technology and increase innovation both in explorative and exploitatively in order to increase their business resilience. The results showed that MSMEs had an optimal capability to maintain their resilience. This research provides a new framework to increase the resiliency of companies in MSMEs and also contributes in both theoretically and practically area. This research contributes to the provision of academic literature on technological capabilities, innovation ambidexterity and business resilience in MSMEs. This study also shows the factors that can affect the resilience of MSME businesses so that they can help MSME owners improve their business resilience in unfavorable situations. This research can also be used as supporting evidence that can be taken by the government regarding the importance of technological capabilities and innovation ambidexterity for the resilience of MSME businesses in Indonesia.

Micro, Small and Medium Enterprises (MSMEs) in Bandar Lampung City need to understand the matters that related to technological capabilities such as the importance of having a basic ability to use technology, the importance of applying technology in business, and insight about the benefits and positive impacts of using technology. In addition, MSMEs in Bandar Lampung City can increase innovation in both explorative and exploitatively dimension by applying new ideas to products and processes, collaborating with other brands, doing interesting marketing and etc. MSME owners must have innovative and creative ideas to create innovations supported by their technological abilities in order to see opportunities and adapt to the market. MSMEs owner must understand the impact of the uncertain economic environment that can happen at any time, as it does today. They must always be prepared to face business uncertainty in order to reduce the impact of shocks like COVID-19. Owners of MSME must also be able to enhance their adaptability so they can easily adapt and survive in adverse situations.

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