

Strengthening Financial Resilience in the Development of Digital Technology

Case Study: Small and Medium Enterprises in Jakarta

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Abstract: This study aims to evaluate factors that influence SME financial resilience due to the development of the digital economy. Survey data was from 264 SMEs in Jakarta in 2019 and analysed with using multiple regression. The results showed that there was an effect of BCM Adoption, Continuity Operations and Sustainability Adoption on Financial Resilience, but Disaster Financial Recovery did not significantly influence Financial Resilience. In addition, Sustainability Adoption is dominant.

Keywords: Financial Resilience, Business Continuity Management Adoption, Continuity of Operation, Sustainability Adoption, Disaster Financial Recovery, Diversification

Date of Submission: 22-05-2020

Date of Acceptance: 09-06-2020

I. Introduction

According to Deloitte Access Economics, around 36% of Indonesian SMEs are still offline, 37% of online businesses are very basic, 18% are in the middle category, and 9% are online advanced categories. According to the McKinsey Global Institute, the number of SMEs able to transact online is only 5%. Even though in the industrial era 4.0 online business capabilities were highly recommended. When there was an economic crisis, SMEs in Indonesia proved to be able to survive well, but what about when facing technological developments in the industrial revolution 4.0 era, were they also able to survive?

The resilience of SMEs due to the crisis has been examined by Rudrajeet Pal et al (2014), which highlights the indirect effects of learning, growth strategies and continuity, as appropriate antecedents for the development of resilience. Aleksic et al. (2013), assessed the potential for resilience of SME organizations as a result of shocks to market globalization and technological progress, researched by Gunasekaran, et al (2011) due to environmental changes that are full of uncertainty (Branicki, 2018), as a result of a turbulent business environment (Ismail et al, 2011). According to Brusset & Teller (2017), resilience to the supply chain happened. The results of studies due to technological developments and the digital economy are still little done. Technological developments that sped out of control, lead to disruptive technology, where new technologies shift the established technology and shake the industry or innovative products by creating a completely new industry. Many new products and services were born because of the development of internet technology that shifts conventional services. So there needs to be a study related to financial resilience and its factors, namely Business Continuity Management Adoption, Disaster Recovery, Continuity of Operations, Sustainability Adoption and strategies to improve financial resilience of Small and Medium Enterprises (SMEs).

II. Literature Review

2.1. Economic Vulnerability

Economic vulnerability is an economic condition that is vulnerable to external shocks and is increasing due to economic openness (Briguglio et al., 2008). Economic vulnerability is a study of specific aspects of a country's weakness, which can increase threats to economic growth and state performance, impact on state per capita income (Cordina (2004). According to Ilan Noy & Rio Yonson (2018), economic vulnerability and economic resilience interact with danger itself, population exposure and physical assets, which are considered as important determinants of the impact of a disaster. The ability to recover and adapt to the negative effects of external economic shocks is the concept of economic resilience (Briguglio, 2008) *Resilience can be considered as the obverse of economic vulnerability*. Macroeconomic stability; microeconomic market efficiency; good governance; and social development are 4 indicators in calculating a country's economic resilience (Briguglio, 2008)

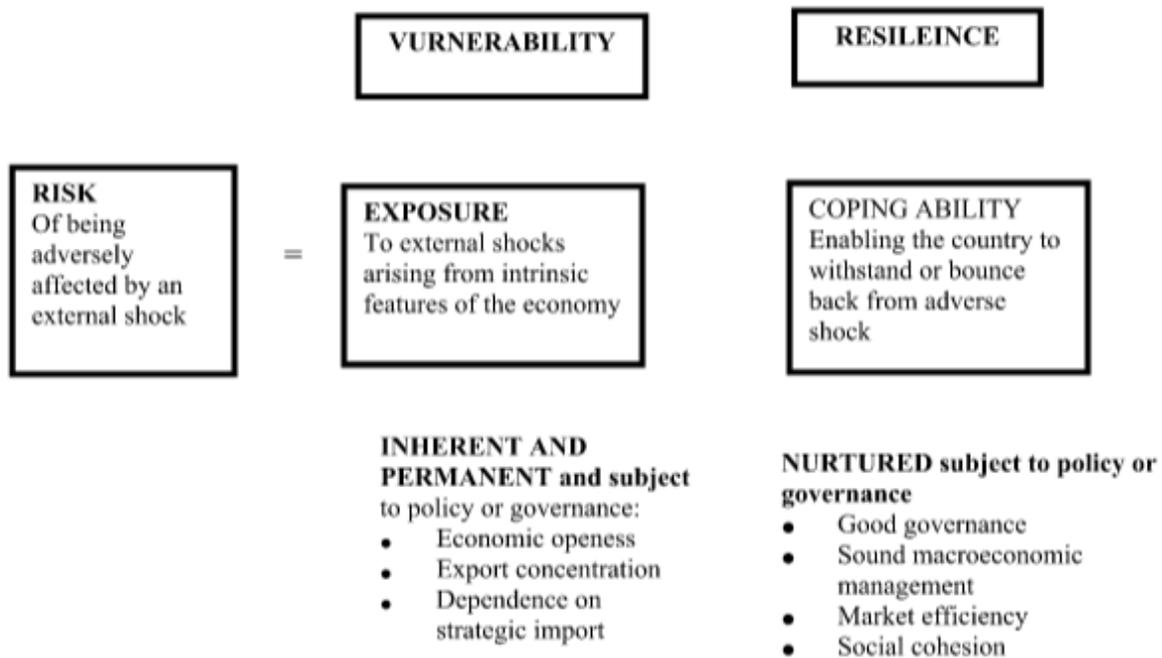


Figure 1. Risk associated with being adversely affected by external shocks. al
Lino Briguglio et al (2004)

2.2 Vulnerability or Resilience

Resilience can mean bounce back (Manyena 2014). Crisis conditions, economic poverty, sustainability and vulnerability give rise to the concept of resilience (Thieken et al., 2014). The main perspectives of resilience are still being debated for example from ecological concepts or connecting them with physics; (Brooks 2006). Resilience becomes a new dimension for disaster risk assessment analysis (Bujones et al. 2013). Resilience is a function of one's interactions with environmental changes over time, (Kim-Cohen and Turkewitz, 2012). Resilience is a process that starts from disruption that continues to adaptation and development, (Carpenter et al, 2012). Crisis experience is an important lesson that is beneficial for future decision making (Moberg & Simonsen 2011). Resilience is the ability of society to overcome disruption due to political, social, and environmental changes, is a concept proposed by Adger (2000). Furthermore, the ability for resilience is the ability to overcome, the capacity of adaptation, and transformation, (Lorenz, 2013)

2.3 Financial Resilience

Many individuals experience periods of financial hardship during life. Some others recover relatively quickly or experience long periods of financial distress. Small business actors often suffer losses due to economic and other shocks, such as the speed of technological development. They need financial resilience, if it is not feared to disrupt the country's economic resilience. That it is important to implement a policy of increasing financial resilience towards income and expenditure (Gathergood and Guttman-Kenney, 2016) and broader economic stability / prosperity (Murtin and d'Arcole, OECD, 2015). Different determinants of resilience depend on the context and specific challenges (Southwick, et al., 2014). The concept of resilience refers to economic entities (individuals, households, businesses, and communities), relationships with stress, disturbances, and crises (MacKinnon & Derickson, 2013), where disruptions are characterized by increased costs, or decreased income or asset value. Maintaining financial looseness (such as liquidity) is one of the methods used to ensure that you have sufficient resources in the event of financial shocks (Brealey, Myers, & Allen, 2014). The resilience and competitiveness of SMEs, in addition to being influenced by progress in operations, technology and globalization strategies, solvency is a financial security that involves the ability to pay debts (Grable et al, 2013)

2.4 Disruptive and SME Competitiveness

The term disruptive technology was first conveyed by Clayton M. Christensen in his 1997 book "The Dilemma of Innovators". Many new products and services were born due to the development of internet technology, such as online transportation services that were truly able to shift traditional transportation services. Another example is Traveloka, which drowned conventional ticket players and hotel vouchers. New brands are so fast growing to replace many old brands that have existed for decades. Many shops, shopping centers tend to be quiet of visitors, people switch to utilizing the marketplace and online shop which is considered more effective and efficient. Technology plays an important role in boosting performance of SMEs and overcoming difficulties in producing goods. HR development is important through training programs; development of potential and expertise according to Santoso et al (2015); (Foris and Mustamu 2015); (Sri Hermuni et al. 2016); (Ariani and Nur Utomo 2017), capital development, reserve fertilization and bank credit funding (Santoso et al 2015); Production innovation activities, development of production equipment machinery, product diversification, and intensive collaboration with suppliers, accordingly (Foris and Mustamu 2015); (Umami et al 2017). That UKM must have local uniqueness, strong will and work ethic, development of entrepreneurial mindset, application of appropriate technology, collaboration with stakeholders, maintaining consistency and sustainability (Umami et al 2017). Technology and Information Support with commitment to using IT, experts, consideration of IT complexity, and environmental uncertainty with stakeholder support (Purna Tri Aji et al, 2015).

2.6 Relevant Research

Factors influencing the resilience of SMEs during the monetary and financial crisis are cash flow, investment, relational networks, strategic and operational flexibility as well as increased profits, and sales turnover (Rudrajeet Pal et al, 2014). In times of crisis, the presence of strong endurance is needed; especially in industrial processes, where if one process fails it causes problems in another process (Aleksić et al. 2013).

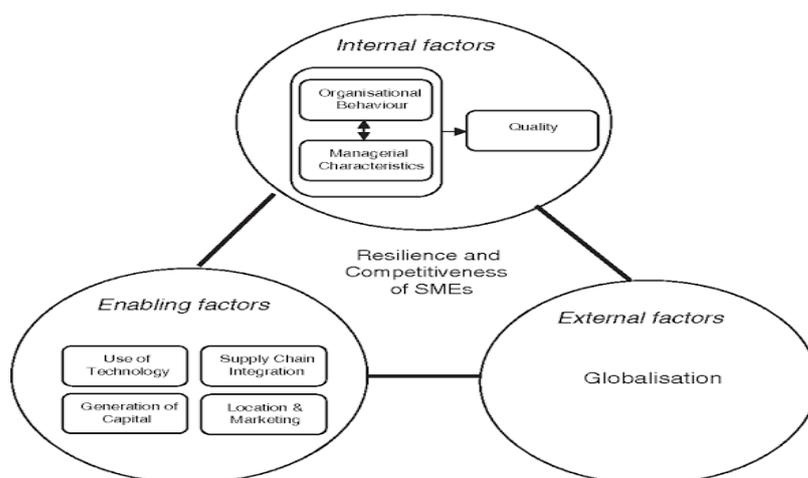


Figure 2. Framework for SME resilience and competitiveness (Gunasekaran, 2011)

The main characteristics of resilience and competitiveness of SMEs are influenced by progress in operations, technology and globalization strategies (Gunasekaran et al., 2011). In addition, their experience of operating and facing difficulties in uncertain environments and entrepreneurial endurance made them very resilient. Furthermore manufacturing SMEs that have a top-down strategic framework are able to survive in a turbulent business environment (Ismail et al., 2011). Supply chain resilience also allows them to be stronger than before (Brusset & Teller, 2017). Monetary system resilience is an eternal theme that characterizes the historical realities of metropolitan cities (Bieri and David .2016). Furthermore, Bieri and David (2016) also linked financial security with governance and regulation.

Table 1: Dimension of Financial Resilience

| | Micro Financial Resilience | Macro Financial Resilience |
|---------------------|--|---|
| Institutional focus | Liquidity and solvency of individual firms, households, or (local) governments; rate of profit, financial leverage | Aggregate sectors of the economy (financial corporations, non-financial corporations,) households, government |
| Functional focus | (Spatial) flow of funds (credit, assets) | Distribution of income (macroimportance of financial industry; 'financialization') |

| | | |
|---|--|---|
| Resistance: Reaction to a shock | Volatility of profit margins; financial leverage | Amplitude of Financial cycle, financial fragility |
| Recovery: Speed of 'bounce-back' | Adjustment of corporate profit margins; de-leveraging of individual balance sheets | Length of financial cycle |
| Re-orientation: Change post-shock composition | Profitability of financial vs non-financial corporations; post crisis leverage | Increasing or decreasing financialization, regime of accumulation |
| Renewal: Re-direction of (growth) path | Level of corporate profitability; fiscal sustainability | Financial stability, secular stagnation |

Source :Bieri (2016)

2.6.1 Business Continuity Management Adoption and Financial Resilience

Zahari Abu Bakar et al (2015) highlighted the important things faced by professionals in the implementation of Business Continuity Management (BCM) where their application requires support from senior management, financial support and the spread of initiatives. Effective implementation of BCM ensures the survival and competitiveness of organizations. The application of BCM in entities is an important part in maintaining performance, because there are operational management considerations needed in long-term planning (Wong, Wei Ning Zechariah (2009-2010). BCM implementation shows disaster preparedness, operational risk mitigation, recovery strategies and protecting operations vital business from disruption, (Andreas Folkers (2017). The application of BCM for SMEs shows a degree of readiness for the development of sustainable business plans, through developing knowledge and training in disaster preparedness, which must be promoted (Mio Kato, Teerawat Charoenrat (2018)

2.6.2 Disaster Recovery and Financial Resilience

Organisasi harus memiliki Rencana Pemulihan Bencana, yang merupakan serangkaian tindakan yang harus diambil sebelum dan sesudah bencana. Memiliki rencana membantu mengurangi potensi kerusakan dan pemulihan kegiatan operasional lebih cepat (Record Nation, 2019). Ada interaksi antara kegiatan kewirausahaan dan keputusan perencanaan, jaringan, pembelajaran, dan lokasi (Brahim Herbane (2019). Rencana pemulihan terhadap bencana terkait dengan subsidi bahwa ada pengaruh positif dari subsidi yang diberikan terhadap penjualan pasca bencana pada perusahaan kecil (Yuzuka Kashiwagi dan Yasuyuki Todo, 2019). Yuzuka Kashiwagi (2019) examines the effect of capital subsidies after a major disaster for SMEs, that capital subsidies have an effective impact on the recovery of performance for SMEs in the retail sector. However, in the manufacturing and other services sectors, no significant differences were found in the recovery of SMEs with and without subsidies. Research by Shubham Pathak Mokbul Morshed Ahmad (2016) said disaster recovery includes processes, policies and procedures related to preparation for the recovery or continuation of technological infrastructure that is important for organizations after disasters caused by nature or by humans. According to Anastasia Marshak et al (2009), the main aspect of financial security in the context of a disaster, is the readiness of direct access that is sufficient to cover the shortcomings, in addition to the selection of various financial strategies such as the preparation of properly designed savings, and insurance services, to be utilized during normal times. Financial resilience and financial strategies in the application of risk management are very important for the fulfillment of financial resources for disaster recovery and reconstruction. To help limit financial resources and preventive action incentives, the role of insurance is also very important (Esther Baur, Martyn Parker, 2015)

2.6.3 Continuity of Operation and Financial Resilience

Supply chain volatility occurs when faced with fluctuations in demand and operating system disruptions, where managers must consider the use of financial instruments and financial resources to ensure supply chain objectives that are resistant to disruptions, (Zherlitsyn et al. 2016). Likewise maintaining growth rates, which not only growth in sales and activities but also personal growth through the development of entrepreneurial and managerial skills and knowledge are important for the stages of the company's life cycle. (Tuinstra et al, 2012). In addition there is a need for a generic conceptual framework consisting of: threat analysis, resilience capacity design, evaluation of resilience costs, quantification of resilience, and enhancement of resilience, (Seyedmohsen Hosseini et al 2016).

2.6.4 Sustainability Adoption and Financial Resilience.

Businesses that are sensitive to the economic situation, need supplier integration and Green Sustainability Planning (GSP) which can affect cash flow and the allocation of company resources. and significantly improving the company's financial performance helps reduce the adverse effects of financial shocks, increasing profits (Wing-Yan Li, et al, 2016). social and environmental practices related to sustainable business, which not only contribute to short-term results, but also organizational resilience, to overcome unexpected situations. The practice helps companies become more resilient, and avoid crisis and bounce back from shock, (Mandojana and Bansal, 2015). In the innovation process it is necessary to integrate various types

of knowledge, both formal and informal, by forming knowledge networks and multi-actor knowledge networks that facilitate the exchange of knowledge, shared learning and produce new solutions that are sustainable and resilient (Sandra Šūmane et al (2018). To be more resilient, companies can apply the concept of sustainability by building knowledge networks so that knowledge exchange occurs, learning together and producing new solutions that are more integrated, (Shah, S. and NaghiGanji, E, 2019)In the Digital era the role of ICT is very important to maintain sustainability, where the factors that influence it are the quality and management of ICT and information culture (Ziemba, E, 2019).The financial security of SMEs is influenced by sustainable business practices that have economic, social and environmental impacts (Caldera, et al, 2019). The performance of SME innovations can be increased through social and environmental considerations and investment in human resources as sustainable practices (Muñoz-Pascual, et al, 2019). The practice of Green Innovations which is oriented towards sustainability through knowledge and natural resources and collaboration is a strong determinant of the adoption of green innovation (Mohamed Aboelmaged and Gharib Hashem, 2019)

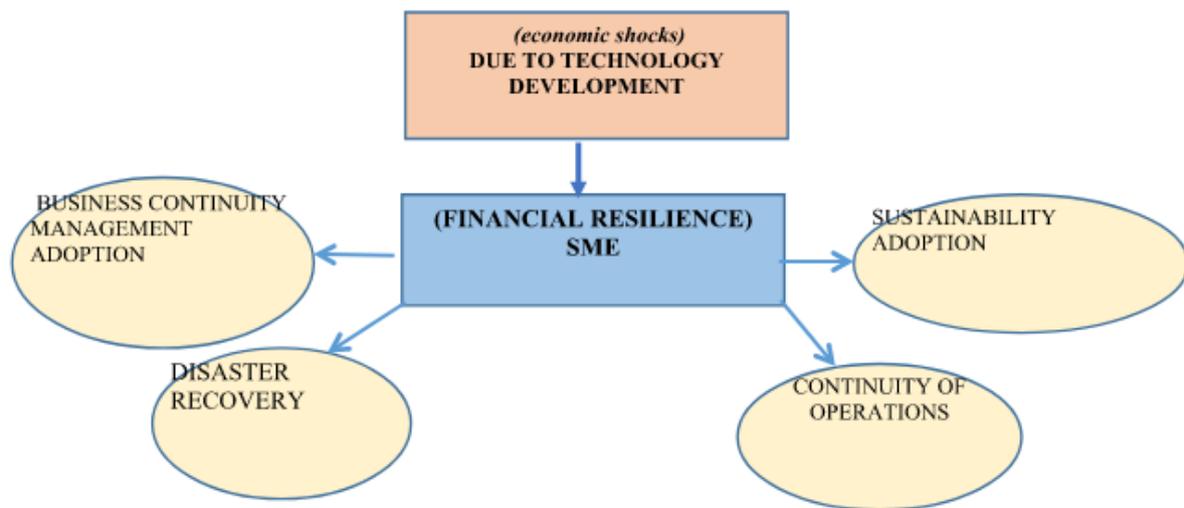


Figure 3. Framework for Strengthening Financial Resilience

Based on the background and conceptual framework with the Bieri concept approach, David S., (2016) framed a research question in the concept of financial resilience and the factors that influence it, using the Gunasekaran (2011) model. As well as by examining strategies on how to strengthen financial resilience of SMEs, the following hypotheses are made:

- H1. There is an influence of Business Continuity Management Adoption on Financial Resilience
- H2. There is an effect of Disaster Recovery on Financial Resilience
- H3. There is a Continuity of Operation effect on Financial Resilience
- H4. There is an effect of Sustainability Adoption on Financial Resilience

III. Research Methodology

3.1 Selection of population and sample objects

The object of this study is SMEs in Jakarta area. For research, the scope is limited to SMEs in Central Jakarta. Population area selection considering that the area has a population-dense classification, has limited land/location and a high level of social vulnerability. SMEs in turbulent regions require priority handling (Ismail et al. 2011). The population is SMEs in Central Jakarta, with a sample of SME actors who have the potential to experience financial vulnerability due to the speed of technological and digital development during 2015-2019. SMEs that are vulnerable in terms of financial criteria; SME actors from over 40 years of age; SMEs who do not have a packaging system, SMEs without innovation; SME actors who have debt arrears; SME actors who have not been actively involved in e-commerce.

3.2 Operationalization of variables

This research was conducted with a literature review to develop an understanding of the factors that determine the theoretical framework of SMI resilience, followed by an empirical study of the framework. Based on a review of the literature, the main factors identified are Business Continuity Management Adoption;

Sustainability Adoption; Continuity of Operations; Disaster Financial, Recovery. These factors are categorized as key variables summarized as follows:

Table 2.Key Research Variables

| Variable/indicator | Source |
|---|--|
| Financial Resilience 1. Volatility of profit margin 2. Ownership of liquid assets and emergency savings / savings. 3. The ability to borrow at reasonable prices. 4. Attitudes, family networks, financial capabilities related to skills and knowledge, motivation, and accessibility to financial services). 5. There is pressure in terms of debt payment 6. The amount of debt without collateral 7. Amount of debt arrears | (Hood et al., 2018); (Levin, 2016); (Rocher dan Stierle, 2015); (Bover et al., 2016); Goddard, Liu, Molyneux, dan Wilson (2010) |
| Business Continuity Management Adoption 1. Competence in the global and digital era 2. Use of ICT 3. Knowledge of business sustainability 4. Identification of potential threats 5. Analysis of vulnerabilities / weaknesses | A Gunasekaran (2011); (Thieken et al. 2014). |
| Sustainability Adoption 1. Access to funding to financial institutions 2. Insurance guarantee 3. Readiness of substitute products 4. Actively launching new products 5. Actively launching varieties of products with the same product | Bieri, David S., (2016), |
| Continuity of Operations 1. Have commercial resources 2. Doing innovation (product, process, marketing) 3. Always improve product quality 4. Carry out internalization 5. Customer Concentration | Brusset&Teller. (2017);Bastaminia et al. 2016); Kim-Cohen dan Turkewitz (2012) |
| Disaster Financial Recovery 1. Speed Adjutment of profit margin 2. Expereinceentrepreneursip 3. Fintech Connexion | (Bujones et al. 2013) |

3.3. Data Collection

Financial security factors that are used according to the Gunasekaran model (2011); Lino Briguglio et al (2004) and Bieri (2016), with a study period of 2015-2019 where the period occurred tendency for most SMEs to experience difficult times in improving performance, which is allegedly due to shocks in technological development. Use regression analysis to understand the key factors of SME financial security. Then the survey was developed and categorized into five groups namely, Business continuity Adoption Management; Sustainability Adoption; Continuity of Operations; Dissaster Financial, Recovery. Furthermore, in-depth interviews were conducted to identify strategies to improve resilience to the local government as the manager, the Head of the UKM Office in Central Jakarta. Furthermore, the formulation of a comprehensive strategy through SWOT analysis and Strategy Position and Action Evaluation Matrix (SPACE) and QSPM analysis, namely by determining the attractiveness of various strategies that are built based on internal and external factors.

IV. Results

4.1. Research Object Profile

SMEs in Central Jakarta with a population-dense classification, limited land / location, as well as a high level of social vulnerability, and including one that is always volatile SMEs have the following financial security conditions:

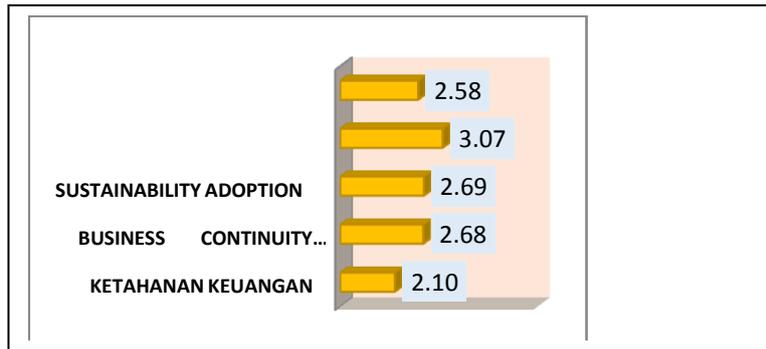


Figure 4. Financial Resilience Profil of SME

Table 3 Score Category

| Interval | Category |
|-------------|---------------------|
| 1,00 - 1,80 | Very Bad/Very Low |
| 1,81 - 2,60 | Bad/Low |
| 2,61 - 3,40 | Enough |
| 3,41 - 4,20 | Good/High |
| 4,21 - 5,00 | Very Good/Very High |

In table 3, the average financial resilience is very low so that recovery from financial failure is very low, seen at an average value that is still below 2.60. It was revealed that SMEs were still unable to anticipate shocks in technological development. Although they still have weaknesses in the financial resilience of SMEs, they have enough ability to adapt to maintain business sustainability and management is ready to adapt to technological changes, seen in the value obtained > 2.60, although the value is very low, but SMEs are quite responsive to understand the changes technology in business, this is why SMEs are still able to maintain operational continuity. SMEs can still maintain their business despite a slowdown in performance. The following is a description of the research variables on SMEs.

Table 4 Financial Resilience (Y)

| Indicator | Percentage | | | | | Score | Average | Category |
|--------------------------------------|------------|-------|-------|-------|-------|-------|---------|----------|
| | 1 | 2 | 3 | 4 | 5 | | | |
| Stable profit | 9,09 | 12,12 | 21,21 | 39,39 | 18,18 | 114 | 3,45 | Good |
| Stable liquid assets | 15,15 | 24,24 | 15,15 | 15,15 | 30,30 | 106 | 3,21 | Enough |
| Emergency savings | 42,42 | 12,12 | 0,00 | 6,06 | 39,39 | 95 | 2,88 | Enough |
| Increased debt | 75,76 | 18,18 | 0,00 | 6,06 | 0,00 | 45 | 1,36 | Very bad |
| Unsecured debt | 90,91 | 6,06 | 0,00 | 3,03 | 0,00 | 38 | 1,15 | Very bad |
| Debt arrears | 78,79 | 12,12 | 6,06 | 3,03 | 0,00 | 44 | 1,33 | Very bad |
| Debt payment pressure from creditors | 87,88 | 3,03 | 0,00 | 6,06 | 3,03 | 44 | 1,33 | Very bad |

The ability of SMEs in anticipating financial resilience, which consists of seven indicators, of which there are 4 indicators about debt. From the graph it was revealed that SMEs in Central Jakarta tend not to be fully capable of managing debt, this is based on the average score of the implementation of SME actors in debt management is relatively very poor when compared to the optimal scale value at position scale 5, while asset management relatively better in the moderate category. This shows that SMEs are still having difficulty managing debt, difficulties in obtaining bank loans, causing SMEs to take shortcuts to take advantage of collateral-free loans whose interest rates are relatively very high so that the inability of companies to pay debt is higher and increase the amount of arrears. Likewise, the ability of SMEs in asset management is still relatively low, as seen in the table in the sufficient category. Even so, their ability to maintain business continuity is relatively good by generating sustainable profits, seen in table 4. which has Good category.

Table 5. Business Continuity Management Adoptions

| Indicator | Percentage | | | | | Score | Average | Category |
|--|------------|-------|-------|-------|-------|-------|---------|----------|
| | 1 | 2 | 3 | 4 | 5 | | | |
| Long-term competitive strategy | 24,24 | 18,18 | 18,18 | 12,12 | 27,27 | 99 | 3,00 | Enough |
| Adoption of Information Communication and Technology | 30,30 | 15,15 | 21,21 | 12,12 | 21,21 | 92 | 2,79 | Enough |
| Knowledge of business risks and sustainability | 15,15 | 30,30 | 12,12 | 15,15 | 27,27 | 102 | 3,09 | Enough |
| Identification of potential business threats from the external environment | 15,15 | 18,18 | 30,30 | 21,21 | 15,15 | 100 | 3,03 | Enough |
| Analysis of financial vulnerabilities / weaknesses | 39,39 | 12,12 | 21,21 | 15,15 | 12,12 | 82 | 2,48 | Bad |
| Strong organizational management support | 54,55 | 6,06 | 21,21 | 3,03 | 15,15 | 72 | 2,18 | Bad |
| Knowledge and financial literacy, banking / financial institutions | 39,39 | 30,30 | 15,15 | 3,03 | 12,12 | 72 | 2,18 | Bad |

The ability of SMEs in adapting to business continuity is still relatively poor, as shown by the average score obtained that produces enough categories to maintain business sustainability. Knowledge about the business risks of SMEs is still relatively low so that they are unable to identify potential external threats so there is a lack of response and adaptation to technological changes which in the end the business strategy is not adaptive to external changes. The business strategy adopted does not take into account external factors resulting in poor performance, namely businesses that do not have financial security. Vulnerability in financial security is also caused by the absence of strong organizational management support and low knowledge and financial literacy of SMEs.

Table 6. Sustainability Adoptions

| Indicators | Percentage | | | | | Score | Average | Category |
|--|------------|-------|-------|-------|-------|-------|---------|----------|
| | 1 | 2 | 3 | 4 | 5 | | | |
| Have access to funding to financial institutions | 57,58 | 6,06 | 21,21 | 9,09 | 6,06 | 66 | 2,00 | Bad |
| Insurance guarantee | 51,52 | 15,15 | 9,09 | 15,15 | 9,09 | 71 | 2,15 | Bad |
| Readiness of substitute products | 21,21 | 27,27 | 15,15 | 6,06 | 30,30 | 98 | 2,97 | Bad |
| Actively launching new products | 15,15 | 15,15 | 24,24 | 21,21 | 24,24 | 107 | 3,24 | Enough |
| Actively launching varieties of products with the same product | 12,12 | 27,27 | 21,21 | 18,18 | 21,21 | 102 | 3,09 | Enough |

The ability to sustainably adapt to SMEs is still poor on average, seen in the average score in the poor and sufficient categories. The inability to adapt sustainably is due to the still low access of SME funding from financial institutions and the limited funds causing the SMEs to be non-innovative which in the end business becomes competitive due to the inability to adapt continuously.

Table 7. Continuity of Operations

| Indicators | Percentage | | | | | Score | Average | Category |
|---|------------|-------|-------|-------|-------|-------|---------|-----------|
| | 1 | 2 | 3 | 4 | 5 | | | |
| Having commercial resources (sumda that can be traded for profit) | 45,45 | 15,15 | 12,12 | 9,09 | 18,18 | 79 | 2,39 | Bad |
| Innovation (product, process, marketing) | 9,09 | 27,27 | 24,24 | 15,15 | 24,24 | 105 | 3,18 | Enough |
| Always strive to improve product quality | 0,00 | 9,09 | 6,06 | 24,24 | 60,61 | 144 | 4,36 | Very good |
| Internalize (efforts to share knowledge among members / colleagues) | 30,30 | 12,12 | 24,24 | 6,06 | 27,27 | 95 | 2,88 | Enough |
| Customer Concentration | 33,33 | 24,24 | 12,12 | 15,15 | 15,15 | 84 | 2,55 | Bad |

Although SMEs have relatively low ability to adapt to change, they always try to improve the quality of the product, the average score is very good, but this is not supported by product innovation, starting with the planning, process and marketing of the products and the limited resources of the company. . The lack of innovation is due to the absence of internalization among good SMEs in the Central Jakarta area.

Table 8 Disaster Financial Recovery

| Indicator | Percentage | | | | | Score | Average | Category |
|--|------------|-------|-------|-------|-------|-------|---------|----------|
| | 1 | 2 | 3 | 4 | 5 | | | |
| Analysis of the speed of adjustment to profits | 33,33 | 24,24 | 21,21 | 6,06 | 15,15 | 81 | 2,45 | Bad |
| Entrepreneurial experience | 18,18 | 15,15 | 15,15 | 15,15 | 36,36 | 111 | 3,36 | Enough |
| Connection to Fintech institutions | 66,67 | 6,06 | 6,06 | 12,12 | 9,09 | 63 | 1,91 | Bad |

Due to poor financial knowledge and literacy among SMEs, SMEs do not have the knowledge to prepare a reserve of financial failure so that it falls into the bad category and is exacerbated by the inability to adapt to technological changes causing no connection to the fintech Institute

4.2 Model Conformity Test

Discussion of the hypothesis will be carried out after the results of the test suitability of the research model. The survey data were processed using Partial Least Square (PLS) using SmartPLS software. While the evaluation of the model on PLS is done in two ways, namely the measurement model and structural model.

a. Measurement Model of Conformity Test (Outer Model)

Outer models which define how each indicator relates to its latent variables. The measurement model (outer model) is used to test the construct validity and instrument reliability. This includes testing Convergent Validity. The indicator is considered valid if it has a AVE value > 0.5 or shows all outer loading variables that have a loading value > 0.5, so it can be concluded that the measurement meets the convergent validity criteria (Chin, 1995). Reliability test is done by looking at the composite reliability value of a block of indicators that measures the construct. The reliability composite results will show a satisfactory value if above 0.7 or have a meaning that the reliability is quite high. Reliability testing can also be strengthened with Cronbach's Alpha. The recommended value is above 0.6 and the table above shows that the Cronbach's Alpha value for all constructs is above 0.6.

Table 9 :Evaluation of Measurement Model (Outer Model)

| Construct | AVE | Composite Reliability | Cronbach Alpha |
|--|-------|-----------------------|----------------|
| Business Continuity Management Adoption | 0,688 | 0,939 | 0,924 |
| Continuity Of Operations | 0,727 | 0,930 | 0,906 |
| Disaster Financial Recovery | 0,811 | 0,928 | 0,884 |
| Financial Resilience | 0,714 | 0,952 | 0,943 |
| Sustainability Adoption | 0,688 | 0,917 | 0,886 |

Table 1 above explains the results of the reliability test, where the value AVE > 0.5, Cronbach Alpha > 0.7 and composite reliability > 0.7, so it can be explained that the variables in this study have indicators with adequate reliability.

Table 10. Loading Factor

| Indicator-Variable | λ | SE (I) | t count |
|--|-----------|--------|---------|
| BCMA1 <- BUSINESS CONTINUITY MANAGEMENT ADOPTION | 0,832 | 0,033 | 25,166 |
| BCMA2 <- BUSINESS CONTINUITY MANAGEMENT ADOPTION | 0,780 | 0,049 | 15,850 |
| BCMA3 <- BUSINESS CONTINUITY MANAGEMENT ADOPTION | 0,836 | 0,028 | 29,385 |
| BCMA4 <- BUSINESS CONTINUITY MANAGEMENT ADOPTION | 0,863 | 0,022 | 39,427 |
| BCMA5 <- BUSINESS CONTINUITY MANAGEMENT ADOPTION | 0,803 | 0,035 | 22,848 |
| BCMA6 <- BUSINESS CONTINUITY MANAGEMENT ADOPTION | 0,829 | 0,028 | 29,809 |
| BCMA7 <- BUSINESS CONTINUITY MANAGEMENT ADOPTION | 0,859 | 0,025 | 33,824 |
| CO1 <- CONTINUITY OF OPERATIONS | 0,856 | 0,027 | 31,982 |
| CO2 <- CONTINUITY OF OPERATIONS | 0,859 | 0,028 | 30,583 |
| CO3 <- CONTINUITY OF OPERATIONS | 0,872 | 0,023 | 37,488 |
| CO4 <- CONTINUITY OF OPERATIONS | 0,868 | 0,030 | 28,616 |
| CO5 <- CONTINUITY OF OPERATIONS | 0,808 | 0,040 | 20,420 |

| | | | |
|-------------------------------------|-------|-------|--------|
| DFR1 <- DISASTER FINANCIAL RECOVERY | 0,911 | 0,022 | 41,282 |
| DFR2 <- DISASTER FINANCIAL RECOVERY | 0,899 | 0,022 | 40,850 |
| DFR3 <- DISASTER FINANCIAL RECOVERY | 0,893 | 0,028 | 32,378 |
| SA1 <- SUSTAINABILITY ADOPTION | 0,808 | 0,042 | 19,315 |
| SA2 <- SUSTAINABILITY ADOPTION | 0,798 | 0,039 | 20,495 |
| SA3 <- SUSTAINABILITY ADOPTION | 0,874 | 0,022 | 40,235 |
| SA4 <- SUSTAINABILITY ADOPTION | 0,799 | 0,038 | 20,879 |
| SA5 <- SUSTAINABILITY ADOPTION | 0,864 | 0,022 | 39,134 |
| FR1 <- Financial Resilience | 0,808 | 0,032 | 25,654 |
| FR2 <- Financial Resilience | 0,803 | 0,034 | 23,297 |
| FR3 <- Financial Resilience | 0,839 | 0,030 | 27,843 |
| FR4 <- Financial Resilience | 0,841 | 0,030 | 28,132 |
| FR5 <- Financial Resilience | 0,838 | 0,035 | 23,704 |
| FR6 <- Financial Resilience | 0,858 | 0,030 | 28,432 |
| FR7 <- Financial Resilience | 0,880 | 0,023 | 38,812 |
| FR8 <- Financial Resilience | 0,890 | 0,019 | 46,834 |

The convergent validity value which is explained by loading factor shows the value > 0.5, and t arithmetic > t table (= 1.98) so that each indicator is valid in measuring the variable.

4. Conformity Test of Structural Model (Inner Model)

After the estimated model meets the Outer Model criteria, the structural model (Inner model) is then tested. Evaluation of the inner model is explained through the value of R², predictive relevance (Q-square value) and Goodness of Fit (GoF). According to (Chin, 1998), if R-Square > 0.67 (strong), 0.33 (moderate) and 0.19 (weak). GOF is used to validate between measurement models and structural models. Values 0 - 0.25 (small), 0.25-0.36 (moderate) and GOF > 0.36 (large). Prediction Relevance (Q-Square) is the predictive capability of the model where if Q-Square > 0.35 (large), more than 0.15 (medium) and <0.02 (small).

Table10.Evaluation of Structural Model (Inner Model)

| | R Square | Q2 | GoF |
|--|-----------------|-----------|------------|
| Business Continuity Management Adoption | - | 0,579 | 0.726 |
| Continuity Of Operations | - | 0,581 | |
| Disaster Financial Recovery | - | 0,586 | |
| Financial Resilience | 0.766 | 0,631 | |
| Sustainability Adoption | - | 0,526 | |

In the table shows that the value of R² in the strong category, Q² large categories and GOF are in large categories, so that the structural model and measurement can be concluded fit.

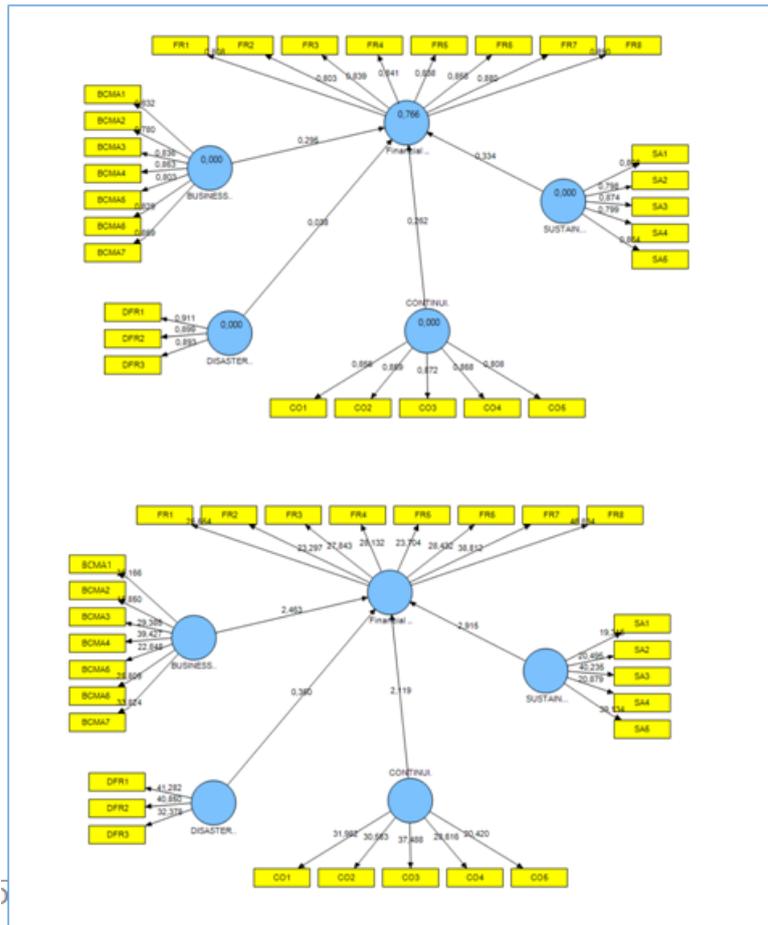


Figure 5: Model Test Results Complete Path Chart

5. Hypothesis Testing

Table 11. Hypothesis Testing

| | Hypothesis | γ | SE(γ) | t count | R ² | Kesimpulan |
|---|---|----------|----------------|---------|----------------|-----------------|
| 1 | Business Continuity Management Adoption -> Financial Resilience | 0,295 | 0,120 | 2,463* | 0,248 | Significant |
| 2 | Continuity Of Operations -> Financial Resilience | 0,262 | 0,124 | 2,119* | 0,214 | Significant |
| 3 | Disaster Financial Recovery -> Financial Resilience | 0,038 | 0,109 | 0,350 | 0,028 | Not Significant |
| 4 | Sustainability Adoption -> Financial Resilience | 0,334 | 0,115 | 2,915* | 0,276 | Significant |

* significant at $\alpha=0.05$ (t table =1.97)

In the table above it can be explained that there is an influence of Business Continuity Management Adoption, Continuity of Operations and Sustainability Adoption on Financial Resilience where t arithmetic > t table (= 1.97) but Disaster Financial Recovery has no significant effect on Financial Resilience. Where Sustainability Adoption has a dominant effect (R² = 0.276) or 27.6% and other factors that participate in Financial Resilience are 23.4%.

4.2 RESULT AND DISCUSSION

4.2.1 Effect of Business Continuity Management Adoption on Financial Resilience

The results of data analysis show that there is an influence of Business Continuity Management Adoption on Financial Resilience, where t arithmetic of 2.463 > from t table of 1.97. Business Continuity Management Adoption, Continuity of Operations and Sustainability Adoption of Financial Resilience where t arithmetic > t table (= 1.97) these results are in accordance with the opinion of The survival and competitiveness of the organization and the readiness to face uncertainty in the future, it is necessary to implement an effective BCM. Its application can be done for example through the adoption of ISO 22301 and ISO 27001 (Zahari Abu Bakar et

al, 2015). In addition, companies that implement BCM are useful in long-term planning and future competitiveness according to Wong, Wei Ning Zechariah (2009-10). BCM also functions for the company's readiness to protect vital business operations from disruptions and reduce the risk and availability of recovery strategies (Andreas, Folkers, 2017). However, adoption of BCM in SMEs often has a low level of readiness and results in failure in developing plans and maintaining business continuity due to limited knowledge and experience (Mio Kato, TeerawatCharoenrat, 2018).

4.2.2 Effects of Disaster Recovery on Financial Resilience

Companies that have a disaster recovery plan will be able to protect business in the event of a disaster, Disaster recovery plans help reduce the potential for damage and speed up the recovery process (Record Nation, 2019). According to the results of the study, there is no effect of Disaster Recovery on Financial Resilience (YuzukaKashiwagi, 2019) who examined the effect of capital subsidies after a major disaster on the recovery of small and medium enterprises (SMEs). Moreover, capital subsidies effectively recover SME performance in the retail sector. However, in the manufacturing and other services sectors, no significant difference was found in the recovery of SMEs with and without subsidies. According to Delloite Access Economics data, more than one third of SMEs in Indonesia (36%) are still offline, another third (37%) only have such basic online business capabilities computers or broadband access, 18% have medium online capabilities and 9% are advanced online businesses. The majority of SMEs have not benefited from digital technology; most of them are not yet fully literate of technology (digital literate. Of the 504 SMEs in Jakarta, only 28 entrepreneurs are registered in Tokopedia. Indonesian Bank (BI) data in DKI Jakarta Province, shows the scale of business. MSME credit in DKI Jakarta is still dominated by loans to medium-scale businesses. According to the Head of Industry and Energy Sub-Department of Industry and Energy City Administration of Central Jakarta, the impact of digital technology development causes difficulties for local governments in meeting new business targets, for example from the target of 5000 actors In 2017, there were only 3331 new business actors, even though they tended to give up and choose to become employees rather than businesses. However, Disaster Recovery is needed when disasters or problems occur due to flooding (Shubham Pathak Mokbul Morshed Ahmad, 2016). Development of organizational resilience depends on the company's location, personal network, external events that occur and the company's attitude towards crisis prevention, this action will have an impact on the maturity and growth and resilience of SMEs (BrahimHerbane, 2019). Furthermore YuzukaKashiwagi and YasuyukiTodo (2019) categorize subsidies for damage to capital goods and facilities in small and medium-sized companies, due to a large earthquake and have a positive indirect effect. Furthermore, Anastasia Marshak et al (2009) clarifies the main aspect of financial resilience in the context of disaster, is the readiness of sufficient direct access to cover the shortcomings and various financial strategies available, through savings, insurance services that can be utilized during normal times.

Disaster risk management must be supported by adequate funding sources so that the recovery process can run faster. Financial resilience and funding strategies are crucial for the disaster relief reconstruction process, for example through insurance instruments (Esther Baur, Martyn Parker, 2015). Disaster recovery includes processes, policies, and procedures related to the preparation for the recovery or continuation of important infrastructure for the organization after a disaster or caused by humans and technology.

4.2.3 The Effects of Continuity of Operation on Financial Resilience

The results show that there are Continuity of Operation effects on Financial Resilience. This result is in accordance with Zherlitsyn, et al, (2016) that the operating system is a major component of the supply chain structure. That the features of implementing financial instruments and financial resources are to ensure the supply chain goals and objectives that are considered and help business entities create supply chains that are resilient to the disruption of marketing and financial situations.

The continuity of company operations can also be demonstrated by the contribution of company growth, not only growth in sales or jobs but also growth in personal capabilities through managerial skills and management and entrepreneurial knowledge, (Tuinstra et al. 2012). Local networks about growth can increase opportunities for growth and entrepreneur's motivation. Skills and knowledge are prerequisites for better growth performance. Sustainability and resilience are also linked to resilient supply chain designs. i.e. threat analysis, resilience capacity design, evaluation of resilience costs, quantification of resilience and resilience enhancement and staff collaboration (Seyedmohsen Hosseini et al, 2016).

4.2.4 The Effects of Sustainability Adoption on Financial Resilience

Evidence of the effect of adoption of Sustainability on Financial Security. For example through of supplier integration (SI) and Green Sustainability Planning (GSP) which affect financial performance and help reduce the adverse impact of financial shocks on the company's financial performance, (Wing-YanLi, et al 2016). Development of organizational resilience that includes increased financial volatility, sales growth, and

socially responsible or sustainable practices, this helps companies become more resilient; able to face a crisis and rise from shock (Natalia Ortiz-de-Mandojana and Pratima Bansal, 2015). Furthermore Sandra Šūmane et al (2018) states the complexity and local specificity can be met in a more inclusive way, by sharing knowledge and networking knowledge through the exchange of knowledge and shared learning and produce new solutions that are more integrated, so that it is sustainable and resilient. Shah, S. and Naghi Ganji, E. (2019) research argue that construction projects are identified as a driver to educate the public towards sustainability awareness, especially in future generations. ICT adoption by building a culture of information, management and quality of ICTs is related to efforts to maintain sustainability (Ziemba, E., 2019). Considering social and environmental factors is a sustainable business practice that provides positive benefits including to increase innovation (Caldera, et al, 2019); (Muñoz-Pascual, et al 2019). While Mohamed Aboelmaged and Gharib Hashem (2019) explains sustainable orientation and collaboration ability emerged as strong determinants but sustainable human resources did not show a significant impact.

V. Recommendation

To expand financial resilience support for SMEs, the public and private sectors must play a role in promoting the practice of Business Continuity Management Adoption (BCMA, in addition to increasing relevant training in accordance with experience of disasters and building infrastructure by the government. Stakeholders should have a disaster recovery plan / shock that occur due to technological developments. SMEs always improve technology knowledge and capabilities; utilize insurance programs, and increase savings and reserves. SMEs should develop managerial capabilities and skills, open cooperation networks as a series in implementing Continuity of Operation practices. SMEs should adopt Sustainability through the practices of building social life with a humanity approach and attention to the preservation of the environment, both the business environment and the environment so that long-term performance is always maintained. In addition, business actors and the government should implement a product or business diversification strategy, take advantage of the existence of the marketplace, and implement online businesses utilizing e-commerce and internet media.

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