

Survival Strategies of Traditional Retailers during the COVID-19 Pandemic: Some Insights from a Developing Country

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Abstract:

Purpose: The paper aims to report the impact of the COVID-19 pandemic and investigate survival strategies during the pandemic of traditional retailers.

Design/methodology/approach: Exploratory methodology consisting of the literature review and an empirical study was conducted. The theoretical framework of resilience strategy was built to provide a guideline for the empirical study. The empirical study involves a longitudinal study with 30 traditional retailers located in Yogyakarta, Indonesia. The empirical data was collected using semi-structured interviews in mid-2019 and mid-2020, corresponding to the condition before and during the pandemic. Secondary data sources were also examined to refine the empirical evidence.

Findings: The findings confirm that the pandemic has created disruptions in supply and demand, subsequently affecting operations. 90% of the traditional retailers experienced demand reduction, which varied among the retailers ($M = 47\%$, $SD = 25\%$), and 10% of the traditional retailers have not received any profit. The majority of the traditional retailer adopted reactive rather than proactive strategies. To cope with the pandemic, the traditional retailers have focused on efficient strategies and implemented exploitation-oriented strategies combined with exploration-oriented strategies. Trust and social capital were also discovered to explain the reasons behind the resiliency and sustainability of the traditional retailers.

Research limitations/implications: Due to the preliminary and explorative nature of the present study, the generality of the findings may therefore be limited. Future research focusing on quantitative analysis using a large sample helps to achieve the generality of the findings.

Practical implications: Because the strategies implemented in large enterprises (LEs) usually do not fit in micro-, small-, and medium enterprises (MSMEs), exploring strategies that are consistent with the characteristics of MSMEs and leverage their potentials is necessary. Building ambidextrous retailers through leveraging social capital/network and informal forum, exploiting affordable technology (e.g., social media, marketplace), and honing innovativeness is a way to survive in a dynamic environment.

Social implications: Because the traditional retailers have contributed to economic development and social function, the government should empower them to leverage their capabilities through training and strengthen their business ecosystem through collective actions.

Originality/value: The study contributes to the resilience body of knowledge concerning the strategies implemented by the traditional retailers during a long and unpredictable disruption in a developing country setting, which is scarce in the literature.

Keywords: traditional retailers, survival strategy, the COVID 19 pandemic, developing country

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1. Introduction

To create a substantial competitive advantage, firms have attempted to ensure the reliability of their operations and associated supply chain during both normal conditions and disruptions such as economic crises, disasters, political and social issues. Several studies, e.g., Scholten, Stevenson and van Donk (2020), have demonstrated that resilient firms generally perform better and thus exhibit various competitive advantages. Because the capability of the firms to deal with the disruptions highly affects the performance and thus business continuity, many firms have attempted to mitigate the risks from disruptions by building the capacity to cope with the disruptions, particularly for predictable and low impact disruptions. However, when the disruption is characterized by a high uncertainty in duration and ripple effect (disruption propagation) such as the COVID-19 pandemic, most business entities have been hit hard. The pandemic has therefore severely disturbed not only national but also global economies. According to Supply Chain Movement (2020), 86% of supply chains have been disrupted by the COVID-19 pandemic. The impacts of the pandemic have been severe for micro-, small- and medium-enterprises (MSMEs). Over 95% of the MSMEs in Pakistan have been affected (Shafi, Liu & Ren, 2020). In the same way, the MSMEs in the US are no exception. It was recorded that 42% of the surveyed MSMEs were temporarily closed, and 2 % were permanently closed (Bartik , Bertrand, Cullen, Glaeser, Luca & Stanton, 2020).

Research on resilience has been developed over the last sixty years (van Hoek, 2020). Most of the literature has, however, focused on large enterprises (LEs). The most recent review of resilience literature has indicated that only 7% of the literature in 2000-2015 have addressed small- and medium-enterprises (SMEs). Whether the resilience studies in LEs are transferable to SMEs remains inconclusive. Some studies, such as that of Demmer, Vickery and Calantone (2011), have suggested that the antecedents identified in resilience research of LEs are also appropriate for SMEs. Ates and Bitici (2011) argued that the implementation of resilience in SMEs differs from LEs due to its different focus, available resources, and higher complexity. Building resilience also requires investments (Li, Zobel, Seref & Chatfield, 2020). Because MSMEs have limited financial and managerial resources, MSMEs tend to be more vulnerable to disruptions than large enterprises (LE). Those MSMEs in the developing countries are in fact more vulnerable (Saad, Hagelaar, van der Velde & Omta, 2021), especially from economic, social, and political instability, in addition to limited resources.

MSMEs serve as an economic backbone for developing countries as they provide income, reduce poverty, and facilitate employment. They contribute 40% of the GDP and 40% of export earnings in Pakistan (Shafi et al., 2020). In South Africa, MSMEs contribute 51-57% of the GDP and 60% of the employment (Fatoki, 2018), and in Indonesia, 59% of the Indonesian GDP and 98% of employment. During the monetary crisis in 1998 and the global economic crisis between 2008 and 2009, 96% of MSMEs in Indonesia survived and contributed to the country's resilience during this financial cataclysm (LPPI - Lembaga Pengembangan Perbankan Indonesia, 2015). The trade sector, including retail, is the highest contributor to the Indonesian GDP and the second largest MSMEs sector in Indonesia after the sector of agriculture, animal husbandry, forestry, and fisheries. In Indonesia, traditional retailers continue to exist despite the significant expansion in current and large retail operations over the last fifty years. Figure 1 shows the constant growth in traditional retail business owners and the domination over modern retailers. It has been argued that concepts and practices suitable in developed economies may not fit the developing economies (Sopha, Jie & Himadhani, 2020).

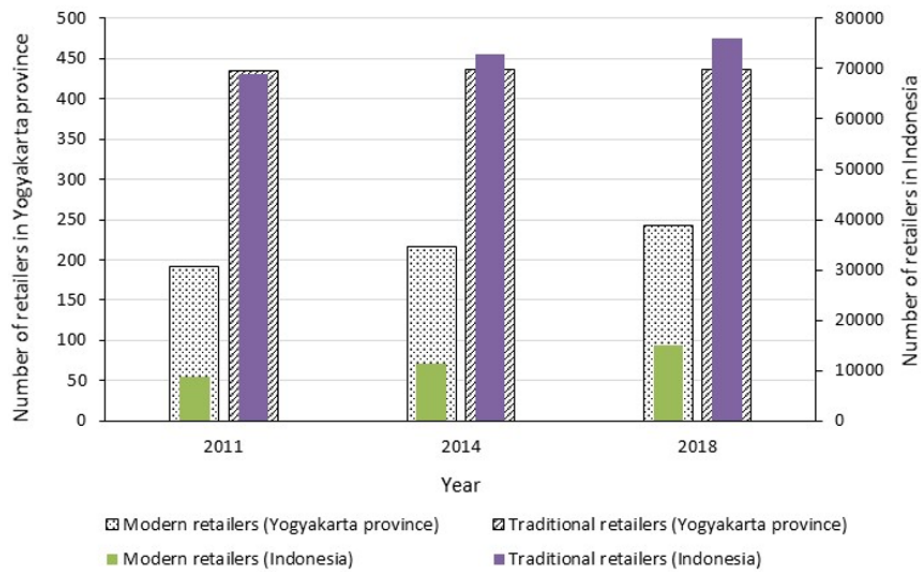


Figure 1. The development of traditional and modern retailers (Bappenas, 2019)

Due to its critical role in supporting the economy in developing countries, it is necessary to explore various resilience strategies for traditional retailers. Therefore, this paper aims to report the impacts of the COVID-19 pandemic on the traditional retailers' operations and then investigate survival strategies adopted by the traditional retailers. For this purpose, a longitudinal study (before and during the COVID-19 pandemic) using semi-structured interviews was conducted at 30 Yogyakarta-based traditional retailers. The empirical data were collected in mid-2019 (before the pandemic) and mid-2020 (during the pandemic) to compare the adopted resilience strategies.

Unlike in the developed countries, traditional retailers have dominated the retail market in many developing countries. Traditional retailers are referred to as traditional stores which are local to the neighborhoods in a city. These enterprises are usually small in dimension (less than 100 m²), sole proprietorship, and self-service establishments with one or few cashiers. Individuals or families usually own traditional retailers. Table 1 compares the characteristics of traditional and modern retail businesses.

Items	Traditional retailers	Modern retailers
Stores	Physical stores	A possible combination of physical and digital stores
Spatial organization	Neighborhood nearby	Based on accessibility, circulation, and parking facilities
Ownership	Independent store	Corporate chain store
Transaction	Bargaining, cash, providing credit	Fixed price, various payment methods including credit cards, digital payment
Functions	Stores as places to fulfill needs (economy of needs)	Stores as places of entertainment and life experiences
Interaction	Personal interaction between owner and consumers	No personal interactions
Network	Local network	Global and centralized network
Communication	Single channel	Multi-channel
Financial resources	Small	Large
Operational costs	Small	High

Table 1. Characteristics of traditional and modern retailers

The traditional retailers target the consumer base of the low-income market segment; however, the purchasing power as a group of low-income consumers has become a factor justifying survival and growth in these traditional retailers (D'Andrea & Lopez-Aleman, 2006). The continuing existence and significant growth of traditional retailers are inseparable from the contribution to society. The traditional retailers have provided not only an economic contribution but also delivered social contribution. In addition to supplying products and services to the general community, the traditional retailers provide goods and services available to less mobile and aged customers and low-income households to resolve social inclusion problems. With regard to value proposition, the traditional retailers offer proximity, product assortment (low margin items and smallest standard sizes of products – providing customers with exactly desired quantity, regardless of the amount), price and quality range from which to choose, face to face transactions, convenience and accessibility, particularly for small daily purchases. However, cluttered spaces and poor environmental hygiene are some of the challenges. Traditional retailers tailor these businesses to their local needs and provide personal touches, including emotional connection to customers and informal credit amenities to increase customer comfort and loyalty. The traditional retailers offer friendship or convenience, the possibility to bargain, credit facilities, and other desirable features uncommon to modern retail businesses. Hence, empowering traditional retailers can drive inclusive growth and development.

To meet the value proposition, the traditional retailers have different ways of doing business compared to the large and modern retailers. The operations of the traditional retailers are characterized by limited financial resources and alignment between ownership and management. Compared to large and modern retailers, financial indicators used by the traditional retailers focus more on cash flow rather than invested capital or sales per employee because the cash flow is the major sustainability determinant. Boulaksil, Fransoo, Blanco and Akoubida (2014) have demonstrated that the level of order in traditional retailers is highly correlated with recent sales. Hence, when stockout occurs, the retailers are likely to provide substitutes. Profits arise from frequent, low-cost purchases and usually comprise 20-30% of the procurement cost. A high frequency of purchases leads to a high inventory turnover (usually more than twice higher than supermarkets). However, Stock Keeping Units (SKUs) are fewer with fewer general categories. Therefore, any mistake in orders has a significant implication because inventory must be efficiently converted into cash. These businesses are characterized by low sales productivity (even for sales per square meter) and high employment efficiency as employees handle numerous tasks, leading to low operational costs. The traditional retailers' supply chain usually includes manufacturers - distributors (exclusive and non-exclusive) - traditional retailers - consumers. The exclusive distributors only sell and deliver goods of their manufacturer, whereas the non-exclusive distributors buy products directly from manufacturers and resell them independently. These distributors usually sell products from various company brands to the traditional retailers in certain areas. Traditional retailers decide to purchase goods from either exclusive or non-exclusive distributors depending on their strategies and preferences.

Traditional retailers are of particular importance due to their contribution to the economic development of the regions and their social functions, such as by serving low-income consumers. Despite its significant social and economic contributions, the traditional retailers have received less attention in resilience literature (Dolega & Celinska-Janowicz, 2015; Wishart, 2018). Because the development of resilience literature has also been driven by globalization when low-cost country sourcing strategies have become popular, authors from the US and Europe dominated (90%) the research in this area. Moreover, resilience literature has been dominated by theory-building. Empirical studies are however still lacking (Kamalahmadi & Parast, 2016). A consistent gap was still found in the most recent resilience literature review (Saad et al., 2021) indicates that empirical and event-based studies are required for future research to add to and validate the theoretical constructs.

To the best of our knowledge, our study is the first that explores the impacts of the COVID-19 pandemic and the survival strategies adopted by the traditional retailers in the context of developing countries. This study makes several contributions to this subject. The first contribution is to provide empirical and evidence-based research to the body of knowledge of resilience research; as Scholten et al. (2020) disclosed, a considerable part of the literature is conceptual, having a limited empirical base. Van Hoek (2020) also pointed out the gap between industry practice and well-defined literature. The second contribution is to provide empirical evidence on the traditional retail resilience regarding the COVID-19 pandemic, as existing literature has not explored this aspect. The third

contribution is to present critical levers for traditional retailers to cope with the disruptions, particularly in developing countries.

This paper is organized into five sections. In chronological order, these are the motivation underlying the research and a brief description of the characteristics of traditional retailers (Section One), the theoretical foundations of the resilience strategies to be used as a reference for empirical study (Section Two), the methodological approach (Section Three), results, discussion, managerial implications (Section Four), and conclusion (Section Five).

2. Theoretical Underpinnings of Resilience Strategies

Resilience can be explored from different viewpoints. Resilience literature has defined resilience with the focus of individuals (e.g., William, Gruber, Sutcliffe, Shepherd & Zhao, 2017), organizations (e.g., Sadghiani, Torabi & Sahebjamnia, 2015), and supply chains (e.g., Li et al., 2020). The word resilience, originally derived from the Latin word *resiliens*, refers to “an ability to develop the required readiness, response, and recovery strategies to manage disruption risks and return to the original or improved state after crises” (Chowdhury, Quaddus & Agarwal, 2019). It implies that the definition of resilience embeds the inherent ability to sustain their performance under the disruptions (stability viewpoint) and the ability to recover from adversity strengthened and resourceful (development viewpoint). Because resilience is seen as an ongoing process, resilience can be viewed as a strategic objective facilitating an organization to be more robust, adaptive, agile, and hence competitive.

Traditional risk management, which involves risk recognition and evaluation, is applied to cope with the disruptions. However, current approaches to deal with disruption require that firms evaluate the risks and prepare and organize internal resources, capabilities, and systems. An enterprise must set capabilities to identify problems, develop alternative plans, and formulate agile and novel alternatives. According to Iborra, Safon and Dolz (2020), resilience in SMEs can be developed in both organizational and individual aspects. The organizational aspect relates to resources, structural organization, and social and environmental practices, whereas the individual aspect relates to the entrepreneur characteristics of the owner.

Furthermore, Kamalahmadi and Parast (2016) denoted that SMEs’ resilience is also connected to supply chain resilience. 73% of the resilience literature has addressed supply chain resilience, only 7% explored organizational resilience (Kamalahmadi & Parast, 2016). Subsequently, the present study addresses the three factors, i.e., individual (the entrepreneurship of the MSMEs’ owner/leader), organizational (MSMEs’ characteristics and capabilities), and supply chain (business environment and interaction), to be included in the resilience framework. These factors further influence the resilience strategies adopted by MSMEs.

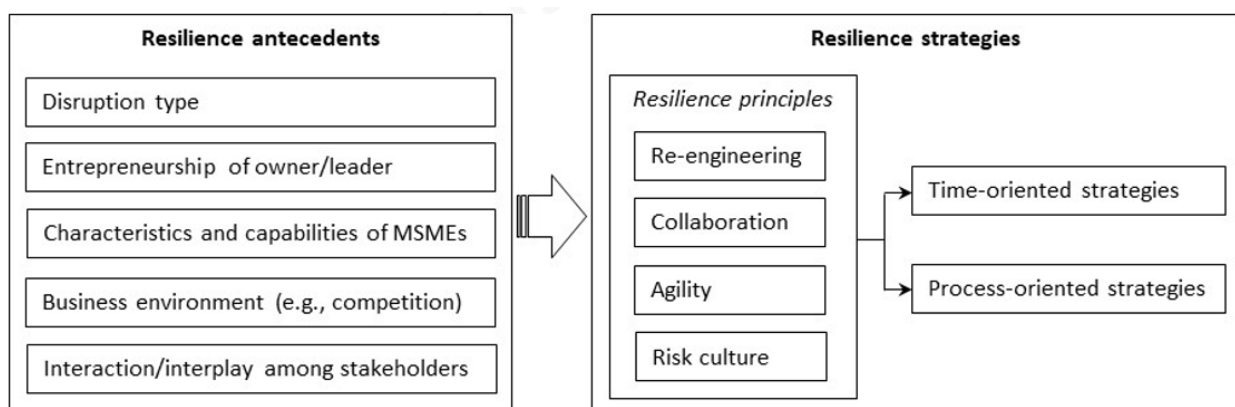


Figure 2. The framework of the resilience strategies modified from Kamalahmadi and Parast (2016)

Figure 2 was constructed based on resilience principles from Kamalahmadi and Parast (2016) which was extended to include the antecedents of MSMEs’ resilience and the resilience strategies, which are discussed as the following. Disruption type, the entrepreneurship of the MSMEs’ owner/leader, MSMEs’ characteristics and capabilities, business environment, and interaction with others have all been influential factors justifying the resilience in

MSMEs. Tang (2006) has further defined two risk categories, i.e., operational risk (business-as-usual incidents such as power outages, material shortages, industrial accidents) and external disruption risk (natural and man-made disasters, economic crisis, labor strikes). The operational risks occur more frequently and are relatively predictable, and have low impact, whereas the external disruption risks have high unpredictability of occurrence and have high impact. The resilience strategies to deal with the operational risks aim at maintaining stability and reliability of the processes and routines. When dealing with a turbulent environment such as economic crises, business competition, the resilience strategies facilitate responsiveness, adaptability, and flexibility (Iborra et al., 2020). Some literature (e.g., Sopha et al., 2020) has revealed that external disruptions such as competitive intensity, market turbulence have significantly affected the MSMEs' performance. As a result, adapting capabilities such as innovation is required. The innovativeness and entrepreneurship of the MSMEs' leader/owner have played a significant role in enabling and facilitating innovations. The empirical studies by Conz, Denicolai and Zucchella (2017) evidenced the relationship between the ability of the leader to select and implement a set of strategies and the MSMEs' resilience.

Similarly, Fatoki (2018) has empirically investigated the positive relationship between entrepreneurial resilience and organizational success. The resourceful behavior of the MSMEs' leaders/owners should be supported by the capabilities of the MSMEs in preparing for adversity, maintaining technical systems, and creating, designing, and implementing innovative solutions rapidly. Battisti and Deakins (2017) showed that an SME's dynamic capabilities regarding proactive strategy and ability to organize and integrate external resources are vital to surviving. Saad et al. (2021) further found that financial capital, size, and ages are key factors influencing SMEs' resilience. It is interesting to note that resource constraints, which usually correspond to the size, are frequently seen as obstacles; smaller organizations have had a simple system and procedures that allow quicker response than large enterprises (Singh, Garg & Deshmukh, 2008).

Furthermore, business environments such as socio-economic, social, and political conditions are essential factors for the MSMEs resilience particularly in developing countries (Saad et al., 2021). The geographical location, the intensity of competition with modern retailers, and regulation are also other particularities influencing the resilience in retail (Dolega & Celinska-Janowicz, 2015). The interaction with other stakeholders such as through collaboration also appears to contribute to MSMEs' resilience. Sopha and Hestiani (2018) have suggested that horizontal collaboration overcomes size and resource constraints in MSMEs, mainly when asymmetry with suppliers exists (Hong & Jeong, 2006). Developing networks among organizations allowing coordination can also reduce the negative impact of disruptions (Pal, Torstensson & Mattila, 2014).

The abovementioned antecedents underlying MSMEs' resilience have been much discussed in the extant literature; however, resilience strategies are reasonably scarce (Wishart, 2018). The resilience definition differs in MSME contexts from LE contexts due to different focus and complexity (Saad et al., 2021), so are the adopted resilience strategies. Smallbone, Deakins, Battisti and Kitching (2012) further noted the unclarity of the strategies fostering resilience in MSMEs. As it is believed that no one size fits all, empirical studies addressing the kinds of strategies or interventions achieving resilience are necessary. The framework, shown in Figure 2, is extended to capture the resilience strategies that help contemplate practical interventions in fostering the traditional retailers' ability to survive.

The four principles of enterprise and supply chain resilience drawn from the literature have been used to formulate resilience strategies (Kamalahmadi & Parast, 2016). The four principles of resilience include supply chain re-engineering, collaboration, agility, and risk management culture. The first principle aims to integrate resiliency by mapping, understanding, and assessing risks and strategies based on the trade-off between redundancy and efficiency in operations, supply, and demand. It is important to note that the condition under which the redundancy should be emphasized is still extensively being discussed by researchers. Collaboration through cooperative contract or information sharing enables risk sharing and, accordingly, helps reduce uncertainty. Agility, defined as the ability to respond to disruptions (in supply or demand) quickly, entails two dimensions, i.e., visibility and velocity. Visibility is generally achieved through connectivity and information sharing, while velocity is attained through streamlined processes, eliminating the non-value-added time and lead time reduction in a bid to respond rapidly and cope with unforeseen changes. The last resilience principle of Supply Chain Risk Management (SCRM) culture emphasizes

the need for people-oriented approaches, including societal values (commitment and leadership), effective interaction, change management, and innovation to build resilience.

Influenced by the antecedents, those resilience principles are embodied in various forms of strategies. Extracted from the literature, the resilience strategies for the traditional retailers can be classified into two types, i.e., time-oriented strategy and process-oriented strategy. Concerning time-oriented strategy, the resilience strategy can further be categorized into proactive and reactive strategies. The proactive strategies, also known as precursor resilience, are developed before the disruption occurs by anticipating a crisis. For instance, safety stock, planning strategies, contracting multiple suppliers, long-term contracts with alternate suppliers, and other redundancy measures are all included in the proactive strategies. The proactive strategies have recently received greater attention in the literature as more empirical evidence indicated that organizations that invest in systems and structures to enable the early identification of challenges are likely to demonstrate high resilience, particularly for less predictable events (Williams et al., 2017). However, the proactive strategies are potentially costly.

On the other hand, reactive strategies or recovery resilience, developed after the disruption, require managing change effectively. The reactive strategies respond to and bounce back from the disruptions, for instance, renting extra trucks in the case of surge demand. Concerning process-oriented strategies, resilience strategies can be categorized into two types, i.e., exploitation and exploration strategies. The process is defined as the sequence of value-adding activities. For traditional retailers, it is related to in-store logistics, assortment and display, promotion, checkout operation, upstream processes (supply), and downstream processes (demand). Rules or procedures that govern the operation in traditional retailers, such as inventory policy, order behavior, and employee management, are also included. Supply disruption can be in the form of stock-out and late delivery, whereas demand disruption may include the dramatic increase on specific items and decrease on another item. Consumer behavior is highly likely to be influenced by the pandemic. The exploitation strategies are defined as those strategies aiming to find the best ways of the existing businesses/operations of the retailers, for instance, optimize the layout and reduce inventory. The exploration strategies are those aiming to obtain new ways to create some value-adding activities, for instance, through innovation.

The framework of resilience strategies helps understand how the COVID-19 pandemic may potentially affect the traditional retailers, the factors underlying their vulnerability and resiliency, and the typical strategies adopted by the traditional retailers in a more structured way. At the same time, the framework serves as a basis to formulate interview questions and analyze empirical evidence, as discussed in the following section.

3. Methodological Approach

Due to the exploratory nature of the study, we employed an exploratory method initiated by reviewing the resilience literature, particularly within the context of MSME and policy documents in the field, to construct the theoretical framework to be used as a guideline for an empirical study the traditional retailers. The empirical study was conducted through a longitudinal study in 2019-2020, corresponding to the circumstances before and during the COVID-19 pandemic.

The longitudinal study was selected because building resilience in an organization is dynamic, multidimensional, and cumulative process of adaptive capacity building (Dolega & Celinska-Janowicz, 2015). Kamalahmadi and Parast (2016) supported this argument stating that enterprise resilience is dynamic and highly influenced by understanding on changes of patterns, which was also aligned with a recent study emphasizing that being resilient is not a static attribute, but a dynamic capacity developing over time (Saad et al., 2021). Therefore, due to the dynamic nature of the resilience, the longitudinal study conducted to the same respondents helps understand the resilience building and adapting processes in the traditional retailers for different types of disruption, i.e., operational risks (before the pandemic) and disruption risk (during the pandemic).

Based on the framework of resilience strategy as shown in Figure 2, the questions for the interviews were constructed. The interview questions consist of the profile of the retailers, which includes questions to explore the resilience antecedents, the impact of the COVID-19 pandemic on the operations and supply chain of the

traditional retailers, and the resilience strategies. The interview questions were rooted in Pettit, Croxton and Fiksel (2013) and Scholten and Schilder (2015). Table 2 summarizes the items of the interview questions.

Empirical data were collected through semi-structured interviews in 2019 and 2020 involving 30 traditional retailers in Yogyakarta, Indonesia. The semi-structured interviews with business owners or managers were conducted in June–August 2019 (before the pandemic) and July–August 2020 (during the pandemic). The first coronavirus case in Indonesia was reported on March 2nd, 2020. All research activities in this period were carried out following the health protocols required by the Indonesian government. In addition, all available secondary data sources and (reports and documents) were also examined to refine the findings.

Aspects	Items
Retailer's Profile	Establishment, location, area, operation hours, number of employees, the owner/leader (gender, education level), customer base, average spending by consumers, offered services (including credit), technology usage, business environment/competition, existing collaboration, entrepreneurship of the owner/leader
Impact of the COVID-19 pandemic	Impact of the COVID-19 pandemic on the operations and supply chain of the traditional retailers. Examples of guiding questions: <ul style="list-style-type: none"> • Could you describe how the COVID-19 pandemic has impacted the internal operations of your business? • Could you describe how the COVID-19 pandemic has impacted your suppliers, customers, and other related stakeholders in your supply chain? • Could you explain the factors contributing to the continued existence of your business during the COVID-19 pandemic?
Resilience strategies	Experienced operational risks, the contingency plan for the operational risks and the pandemic (when available), adopted and planned strategies, current and potential barriers for strategy implementation. Examples of guiding questions: <ul style="list-style-type: none"> • Could you describe with examples what kinds of crises/disruptions that your business has experienced? • Could you describe how to deal with the crises/disruptions (redundancy, efficiency, collaboration, visibility, velocity, leadership, commitment, exploration)? • Could you elaborate more on which strategies were considered successful and non-successful? • Based on the previous experiences, could you explain the plan to deal with similar crises/disruptions in the future (proactive vs reactive strategies)? • Could you explain the barriers to implementing the plan? • Could you explain the strengths and weaknesses of your business to deal with the crises/disruptions?

Table 2. Question items for semi-structured interviews

A purposive sampling that included snowballing methods was used to represent a heterogeneous group of the traditional retailers concerning age, size, location, customer base, and adopted technology in supporting the retailers' operations, based on the rationale that these underlying factors characterize the retailers and hence may influence the adopted resilience strategies. According to Palys (2008), purposive sampling was practical to guarantee maximum variability within the primary data. Table 3 presents the statistical profile of the sample.

All of the retailers are individually or family-owned. 70% of the sampled retailers are the primary income source of the individual/family and the rest as a side income. The sample represents diverse retailers concerning age, size, operating hours, and customer base. It is important to note that location is also a crucial factor in the context of retailers because the retailer differentiate themselves from each other by location, and the location is a determining factor toward the retailers' resilience (Dolega & Celinska-Janowicz, 2015). The study categorized the retailers into those located on city streets or near public facilities and neighbourhood areas in a community.

Similarly, the local customers, corresponding to the social function of the retailers, are influential on the traditional retailers' resilience. It is not surprising that most retailers used simple technology such as electronic calculators, while 34% of the retailers do not use any technology. Only 6% of the traditional retailers use more advanced technologies such as barcode and mobile apps/marketplace.

Factors	Descriptive Statistics			
Continuous variable	M	SD	Min	Max
Age (years)	15	14	1	50
Area (square meters)	28	15	9	64
Operating hours (hours)	13	13	8	24
Local/neighborhood consumers (%)	65	27	5	100
Consumer expenditure for one purchase (Indonesian Rupiah, IDR)	18,833	10,642	10,000	50,000
Categorical variable	Percentage (%)			
Location				
a) City streets/near to public facilities	23			
b) Neighborhood area in a community	77			
Adopted technology				
a) None (manual)	34			
b) Calculator	60			
c) Point-of-Sales (PoS) system	3			
d) Mobile apps/marketplace	3			

Table 3. The sample profiles

4. Results and Discussion

This section is split into three sub-sections. The first one presents the impacts of the COVID-19 pandemic on both retail operations and financial performance, the second one discusses the survival strategies of the traditional retailers during the pandemic and compares the resilience strategies before and during the crisis, and the third one discusses the managerial implications.

4.1. Impact of the COVID-19 Pandemic

The pandemic has caused disruptions in both supply and demand and has severely impacted the internal operations and bottom-line profit. Figure 3 shows that the COVID-19 pandemic has resulted in supply disruption, particularly for some items acquired from out-town suppliers, and 7% of the traditional retailers experienced stockout. 90% of the traditional retailers have also encountered demand reduction. Due to the restriction of people's movement during the pandemic, people with a strong financial power bought goods in a large quantity from larger retail stores and/or wholesalers to reduce their travels. The experienced sales reduction ranged from no reduction to 90% reduction. Before the pandemic, the traditional retailers typically experienced demand reduction ranging from 10% to 20% due to seasonal demand. The demand reduction has then resulted in obsolescence, which then imposed the traditional retailers to lower their inventory. The disrupted supply, combined with decreasing demand, decreased the service levels and eventually reduced revenues. It was reported that 10% of the traditional retailers had not made any profit.

It is worthy to mention that the demand reduction among the sampled traditional stores greatly varies ($M = 47\%$, $SD = 25\%$). 10% of the traditional retailers did not experience demand reduction during the pandemic. Further investigation indicated that those traditional retailers were located in the neighborhood area, and none of them were located in city streets/near to public facilities. Further analysis found that the traditional retailers located in city streets/near to public facilities encountered higher demand disruptions, corresponding to the average drop of demand by 79% ($SD = 5\%$), compared to those located in a neighborhood area with the average revenue reduction of 37% ($SD = 20\%$). Similar evidence was observed by Ozuduru and Guldman (2013), who argue that the traditional retailers on city streets have minor competitive power, thus facing more instability. The traditional stores with stable demands were in the middle of the community they served, whereas those with higher demand reduction were close to public facilities such as tourism areas, amusement parks, or schools. The result implies that the location of the traditional retailers plays an essential role in sustaining their resilience, due to the fact that the traditional retailers that are located in a neighborhood area, have higher competitive power of a large venue and a

sufficient customer base to enjoy the benefits of agglomeration economies. It then contributes to the traditional retailers' resilience. The finding thus confirms that the location of the retailers is one of the determinants for the resilience of retailers.

The findings of the present study are also common in SMEs in other countries. A survey of small businesses in the US found that 79% of the small businesses have faced demand reduction, and 35% have dealt with supply chain problems (Bartik et al., 2020). Likewise, 68% of the MSMEs in Pakistan have financial problems, 48% experienced supply chain disruption, 44% suffered from demand reduction, and 42% were hit by profit reduction (Shafi et al., 2020).

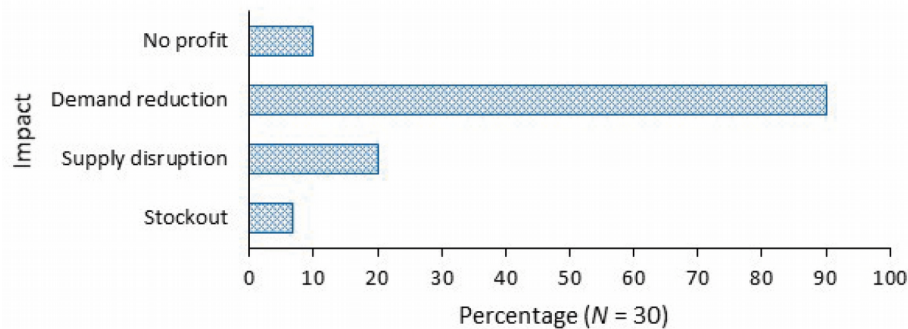


Figure 3. The impact of the COVID-19 pandemic on the retailers

4.2. Resilience Strategies Before and During the COVID-19 Pandemic

Figure 4 shows the typical disruptions (risk factors) experienced by the traditional retailers before the pandemic. Seasonal demands seem to be the most frequently experienced disruption by the traditional retailers, followed by increased product variety, business competition, particularly with modern retailers, regulation, supply disruption, and power outage. The increased product variety has been perceived to be particularly challenging due to limited space in the stores. Government regulation on the maximum allowable stock limit for some items such as cooking gas has caused a potential stockout. Supply chain disruption is caused by limited supply for some items and inaccurate delivery.

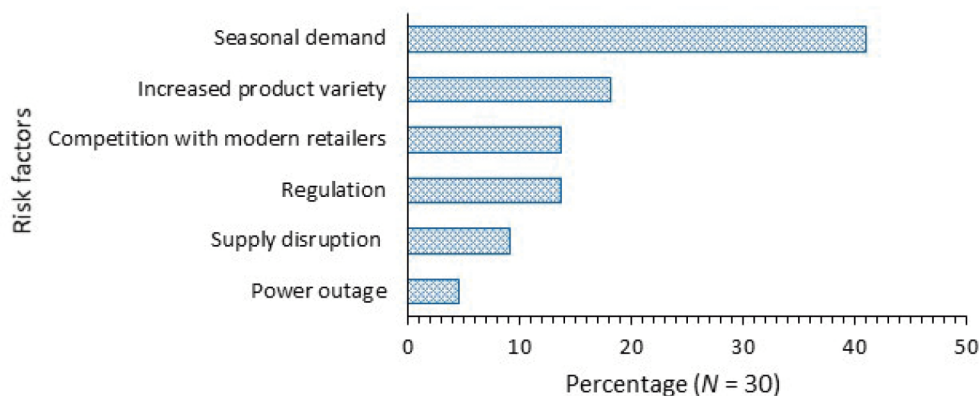


Figure 4. Risk factors before the COVID-19 pandemic

Table 4 lists the various strategies adopted by traditional retailers. It was found that 53% of the traditional retailers confirmed that they did not have specific strategies to deal with the disruptions, whereas 47% of the retailers have been aware of the potential risks and have subsequently implemented the strategies to reduce the negative impact of the disruptions. Moreover, only 40% of the traditional retailers have already devised a contingency plan to mitigate such disruptions (proactive strategies). Unfortunately, they were left unprepared for such a prolonged disruption as the pandemic. This finding resonates with Herbane's (2010) work which observed that

managers/leaders in SMEs tend to react to the crisis rather than proactively plan for it. Behavioral characteristics (e.g., short-term focus) and organizational constraints (e.g., limited resources) drive reactive behavior. It was also evidenced that the traditional retailers who treat their business as their primary sources of income have implemented various strategies and are more proactive in maintaining operations. Before the pandemic, the most frequently adopted resilience strategy was the optimization of store display and layout and maintaining product quality, in order to deal with increased product variety and ultimately, increase competitiveness. When coping with supply disruption, 10% of the traditional retailers have alternative suppliers without a formal contract. In addition, 3% of the traditional retailers negotiate with suppliers to avoid stockout.

Strategy	Before the pandemic	During the pandemic
Exploitation strategy		
Efficient display/layout and maintaining product quality	35%	30%
Reducing stock		50%
Product substitution		3%
Opening hour reduction		3%
Safety (COVID-19 protocols)		100%
Alternative suppliers	10%	
Local sourcing		10%
Information sharing to supplier		10%
Arm-length (horizontal) coalition		10%
Negotiation	3%	
Promotion		3%
The use of technology (social media, mobile apps, marketplace)		27%
Exploration strategy		
Home delivery		13%
Expanding business (e.g., food stalls)		3%
No strategy	53%	0%

Note: the traditional retailers may implement one or more strategies ($N = 30$)

Table 4. Resilience strategies before and during the COVID-19 pandemic.

Table 4 also indicates that the implemented resilience strategies during the pandemic are more varied than those before the pandemic. All of the traditional retailers have implemented resilience strategies and used more than two strategies to survive. It can be argued that sticking to one strategy can minimize the risks during the normal condition, while, in a turbulent environment, strategies that enable them to be flexible and adaptive offer the retailers the best chance for surviving. This finding is supported by Conz et al. (2017) who coined the notion of strategic diversity as a key to SMEs' resilience. All of the traditional retailers have implemented COVID-19 protocols in their store, such as imposing the use of face masks, providing handwashing or hand sanitizer, ensuring hygiene, and physical distancing, to ensure the safety of their customers and, consequently, to maintain sales. Furthermore, reducing stock, followed by efficient display/layout and maintaining product quality, and the use of technology seems to be the most prevalent strategy adopted during the pandemic.

It is also important to note that, before the pandemic, the traditional retailers focused on exploitation strategies focusing on efficient and redundant principles. These included re-arrangement of product display (by optimizing available spaces), increased product assortment, and provision of high-quality products, maintaining service level (through alternative suppliers) to maintain demand level, and being competitive. On the other hand, during the

pandemic, the traditional retailers focused on efficiency strategies. The findings confirm the framework in a way that the disruption type does influence the adopted resilience strategies.

During the pandemic, all of the strategies have focused on efficient rather than redundancy principles. The traditional retailers did not adopt redundancy strategies such as inventory buffering, alternative suppliers, emergency backup, or safety stock. Two out of three stores unaffected by the pandemic expanded their product varieties and offered substitutions to maintain sales. They did not prefer the redundancy strategies due to limited financial resources and the risk of product shrinkage during the pandemic. 50% of the traditional retailers reduced inventory/stock due to lower demand, so as to avoid product obsolescence. On the other hand, to increase sales and visibility, the traditional retailers intensified product promotions and extensively used internet technologies, such as social media, mobile apps, and the marketplace. The findings indicate that the traditional retailers tend to adopt the efficiency strategies, such as re-arranging product display and layout, offering product substitution instead of increasing inventory, information sharing, and switching to near/local suppliers.

To deal with supply disruption before the pandemic, the traditional retailers have alternative suppliers in the advent of suppliers' unreliability. The traditional retailers tended to disapprove of collaborations with distributors to ensure an easy switch with other distributors. Therefore, information was often distorted due to insufficient collaboration, as demonstrated by the discrepancies between the received and requested goods. During the pandemic, the traditional retailers shared order information in advance to the suppliers to avoid excess inventory. However, the traditional retailers did not make a formal agreement with their suppliers. To mitigate the risk from supply unreliability, 10% of the traditional retailers have shifted to local/near sourcing instead of implementing alternative suppliers.

Collaborations performed amongst traditional retailers in sharing risks, particularly during stockouts, were also worthy of note. 10% of the traditional retailers formed a coalition, arms' length relationship, without formal agreements. The alliance was established based on trust, which underlined the interactions between the owners and customers. For instance, the proprietors of some retail businesses offered credits to clients without any guarantee. This trust represents a precondition of social capital further defined as the sum of the actual and potential resources embedded within, through, and derived from the network of relationships possessed by the traditional retailers. Since trust engenders social capital, which generates reliable associations (Fu, 2004), the traditional retailers have been supported by social connections, positively related to the continued survival. It has created mutual dependencies and, to an extent, determined the degree of resilience of the traditional retailers (Scholten & Schilder, 2015). Some studies have demonstrated that developing networks among organizations and facilitating coordination reduces the negative impacts of the disruption (van der Vegt, Essens, Wahlström & George, 2015).

Based on the aforementioned adopted strategies, it appeared that the traditional retailers had implemented the efficiency strategies, which are accompanied by some degrees of flexibility. It was found that the majority of resilience strategies implemented by the traditional retailers focused on efficiency through optimizing display and layout, opening hours, and local sourcing. Other flexibility strategies such as product substitutions were also observed. It is also important to highlight that traditional retailers could not source from multiple suppliers without the economies of scale and power to collaborate. Coalitions among the traditional retailers were found to be an efficient alternative to sustain competitive advantages. Through the coalition, the retailer members positively affect the operations through risk-sharing, resulting in better financial performances.

Concerning the agility strategies, velocity was achieved through communication with distributors in advance, and visibility was realized through promotions. The affiliation between the traditional retailers and suppliers was transactional, where cooperation between both groups was notably lacking. Some traditional retailers share order information to distributors ahead of time to minimize distorted information. It is important to note that the traditional retailers have been aware of the benefits of Information Technology (IT) such as marketplace, and they have shown willingness to adopt; however, they do not have adequate resources and knowledge. Moreover, the owners of the traditional retailers prefer to do the transaction in cash as it enables them to interact with the customers personally and provide them with cash-in-hand to continue the business. Due to the limited use of IT, the traditional retailers may have limited capabilities to detect disruptions and recover from the disruptions.

During the pandemic, the traditional stores have also adopted exploration strategies by finding new ways of doing business and expanding some value-adding activities, such as offering home delivery services and opening food stalls, to cope with the disruption. However, few traditional retailers have implemented the exploration strategy. Further analysis has indicated that the owner/leader of the traditional retailers implementing the exploration strategy has a sustained commitment to innovation. Business expansion such as home delivery services and food stalls were the innovative schemes to survive the pandemic. Erkip, Kizilgun and Akinci (2014) further indicated that innovative strategies can be used to compete with large-scale retailers.

In summary, the surviving strategies of the traditional retailers during the pandemic have exhibited ambidexterity, combining the exploitation- and exploration-oriented strategies. They also demonstrated the dynamic capabilities of sensing, seizing, and reconfiguring their resources (Teece, 2007) to adapt to changes in the environment, which then help build resilience. The findings resonate with the work by Iborra et al. (2020), highlighting that ambidexterity increases SME resilience.

4.3. Managerial Implications

It seems that risk cultures are yet to be developed as these retailers tend to be passive and reactive. It was evident in a related work by Erkip et al. (2014), where the resilience strategies of traditional retailers were demonstrated to be reactive rather than proactive. It appears that the business structure of the traditional retailers strongly affects the strategies to develop their resilient strategies. As planning for a crisis is usually costly (though increases resilience), using informal forums (e.g., social networking) for rehearsing future scenarios, gaining an understanding of uncertainty, and developing a future-oriented decision might be an option for SMEs to develop contingency plan (Sopha et al., 2020).

Unlike large firms which typically deal with unexpected changes through anticipation (as they tend to possess adequate financial resources enabling them to create such redundant structures, diversify supply chains, increase insurance coverage (Linnenluecke, 2017), the traditional retailers find it challenging to create redundancy. Therefore, efficiency and flexibility strategies are combined in such a way to enable them to be more susceptible to disruptions. Ambidexterity strategy allows the MSMEs to be adaptive, and at the same time, efficient. This is supported by Iborra et al. (2020), confirming that ambidexterity capability and strategic consistency do influence the SMEs' resilience.

The traditional retailers, which are deeply rooted in the local economy and conventional wisdom, have perfectly fulfilled the needs of their consumers. The traditional retailers respect payment terms and the local wisdom and social capital of the community. Thus, empowering traditional retailers through product- and industry-specific training and strengthening the business ecosystems in which they operate to enable them to increase their incomes, protect them from financial risk, and expand valued products and services in their communities, therefore facilitating further their resilience and sustainability.

Furthermore, although the initial target consumers of the modern retailers are middle and upper-income consumers, modern retailers such as supermarkets and hypermarkets are likely to adapt to various consumers' requirements over time. Given the economies of scale advantages, modern retailers can reduce prices and consequently attract lower-income consumers. Therefore, the traditional retailers should be upgraded to adapt to changing consumer preferences by offering high-quality products, adjusting opening hours, supply chain structure and physical infrastructures, and IT (e-commerce) to remain competitive. Government policy should support the traditional retailers by promoting collective actions to reduce transaction costs, facilitate capacity building, and improve infrastructure.

5. Conclusions

This study reports a preliminary, exploratory investigation on the impacts of the COVID-19 pandemic on the operations of the traditional retailers and the identification of survival strategies during the pandemic. The exploratory research design was initiated by constructing the theoretical framework of resilience strategy to guide the longitudinal study with thirty traditional retailers in Yogyakarta, Indonesia, in mid-2019 and mid-2020, representing the circumstances before and during the pandemic, respectively.

The findings confirm that the pandemic has indeed impacted the traditional retailers on their operations and supply chains. The empirical evidence has supported that the disruption type, the entrepreneurship of the MSMEs' owner/leader, the MSMEs' characteristics and capabilities, the business environment, and the interaction/interplay with other stakeholders (facilitated by trust and social capital) did influence the resilience strategies adopted by the traditional retailers. The findings indicated that the majority of the traditional retailers adopted reactive strategies rather than proactive strategies. The resilience strategies before the pandemic focused on efficiency and redundancy, whereas the resilience strategies during the pandemic focused on efficiency. To cope with the pandemic, the traditional retailers adopted the combination of exploitation-oriented strategies such as adopting health protocols, optimizing display/layout, reducing stock, providing substitutions and frozen foods, reducing opening hours, decreasing order, sourcing locally, sharing information, promotion, and exploration-oriented strategies such as home delivery services and expanding business such as food stalls.

It was worth noting that the resilience of the traditional retailers was inseparable from the trust, wisdom/culture, and, consequently, the community's social capital, which was non-existence in modern retailers. The traditional retailers facilitate not only economic development but also social engagement, which rationalized the resiliency and sustainability of the traditional retailers. However, to ensure the sustainability of traditional retailers in more competitive markets, improvements on high-quality and reliable products, supply chain structures, IT adoption, physical infrastructures, capacity building, and government policy facilitating these improvements should be implemented.

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References

- Ates, A., & Bititci, U. (2011). Change process: a key enabler for building resilient SMEs. *International Journal of Production Research*, 49(18), 5601-5618. <https://doi.org/10.1080/00207543.2011.563825>
- Bappenas (2019). Jumlah Toko/Warung Kelontong. Available at: https://hub.satudata.bappenas.go.id/dataset/simpadu_pk_s010100437 (Accessed: January 2019).
- Bartik, A.W., Bertrand, M., Cullen, Z., Glaeser, E.L., Luca, M., & Stanton, C. (2020). The impact of COVID-19 on small business outcomes and expectations. *Proceedings of the National Academy of Sciences of the United States of America*, 117(30), 17656-17666. <https://doi.org/10.1073/pnas.2006991117>
- Battisti, M., & Deakins, D. (2017). The relationship between dynamic capabilities, the firm's resource base and performance in a post-disaster environment. *International Small Business Journal*, 35(1), 78-98. <https://doi.org/10.1177/0266242615611471>
- Boulaksil, Y., Fransoo, J.C., Blanco, E.E., & Akoubida, S. (2014). Small traditional retailers in emerging markets, *Working Paper*, 460. Available at: <https://pure.tue.nl/ws/files/3990730/24830284476710.pdf> (Accessed: June 2018).
- Chowdhury, M.M.H., Quaddus, M., & Agarwal, R. (2019). Supply chain resilience for performance: role of relational practices and network complexities. *Supply Chain Management: International Journal*, 24(5), 659-6760. <https://doi.org/10.1108/SCM-09-2018-0332>
- Conz, E., Denicolai, S., & Zucchella, A. (2017). The resilience strategies of SMEs in mature clusters. *Journal of Enterprising Communities*, 11(1), 186-210. <https://doi.org/10.1108/JEC-02-2015-0015>

- D’Andrea, G., & Lopez-Aleman, B. (2006). Why small retailers endure in Latin America. *International Journal of Retail and Distribution Management*, 34(9), 661-673. <https://doi.org/10.1108/09590550610683184>
- Demmer, W.A., Vickery, S.K., & Calantone, R. (2011). Engendering resilience in small- and medium-sized enterprises (SMEs): a case study of Demmer Corporation. *International Journal of Production Research*, 49(18), 5395-5413. <https://doi.org/10.1080/00207543.2011.563903>
- Dolega, L., & Celinska-Janowicz, D. (2015). Retail resilience: A theoretical framework for understanding town centre dynamics. *MRPA Paper*, 72319. The University of Liverpool. Available at: <https://mpra.ub.uni-muenchen.de/72319/> (Accessed: January 2019).
- Erkip, F., Kizilgun, O., & Akinci, G.M. (2014). Retailers’ resilience strategies and their impacts on urban spaces in Turkey. *Cities*, 36, 112-120. <https://doi.org/10.1016/j.cities.2012.12.003>
- Fatoki, O. (2018). The impact of entrepreneurial resilience on the success of Small and Medium Enterprises in South Africa. *Sustainability*, 10, 2527. <https://doi.org/10.3390/su10072527>
- Fu, Q. (2004). *Trust, social capital and organizational effectiveness*. Master thesis. Virginia Polytechnic Institute, Blacksburg, Virginia, US.
- Herbane, B. (2010). Small business research: Time for a crisis-based view. *International Small Business Journal*, 28(1), 43-64. <https://doi.org/10.1177/0266242609350804>
- Hong, P. & Jeong, J. (2006). Supply chain management practices of SMEs: from a business growth perspective. *Journal of Enterprise Information Technology*, 19(3), 292–302. <https://doi.org/10.1108/17410390610658478>
- Iborra, M., Safon, V., & Dolz, C. (2020). What explains the resilience of SMEs? Ambidexterity capability and strategic consistency. *Long Range Planning*, 53(6), 101947. <https://doi.org/10.1016/j.lrp.2019.101947>
- Kamalahmadi, M., & Parast, M.M. (2016). A review of the literature on the principles of enterprise and supply chain resilience: Major findings and directions for future research. *International Journal of Production Economics*, 171(1), 116-133. <https://doi.org/10.1016/j.ijpe.2015.10.023>
- Li, Y., Zobel, C.W., Seref, O., & Chatfield, D. (2020). Network characteristics and supply chain resilience under conditions of risk propagation. *International Journal of Production Economics*, 223, 107529. <https://doi.org/10.1016/j.ijpe.2019.107529>
- Linnenluecke, M.K. (2017). Resilience in business and management research: a review of influential publications and a research agenda. *International Journal of Management Review*, 19, 4-30. <https://doi.org/10.1111/ijmr.12076>
- LPPI - Lembaga Pengembangan Perbankan Indonesia (2015). Profil bisnis usaha mikro, kecil and menengah (UMKM). Available at: <https://www.bi.go.id/id/umkm/penelitian/Documents/Profil%20Bisnis%20UMKM.pdf> (Accessed: March 2020).
- Ozuduru, B.H., & Guldman, J.M. (2013). Retail location and urban resilience: towards a new framework for retail policy. *Surveys and Perspectives Integrating Environment and Society (SAPIENS)*, 6(1), 1-13. Available at: <https://journals.openedition.org/sapiens/1620>
- Pal, R., Torstensson, H., & Mattila, H. (2014). Antecedents of organizational resilience in economic crises—an empirical study of Swedish textile and clothing SMEs. *International Journal of Production Economics*, 147, 410-428. <https://doi.org/10.1016/j.ijpe.2013.02.031>
- Palys, T. (2008). Purposive Sampling. In Given, L.M. (Ed.), *The Sage Encyclopedia of Qualitative Research Methods* (2, 697-698). Los Angeles: Sage.
- Pettit, T.J., Croxton, K.L., & Fiksel, J. (2013). Ensuring supply chain resilience: Development and implementation of an assessment tool. *Journal of Business Logistics*, 34(1), 46-76. <https://doi.org/10.1111/jbl.12009>

- Saad, M.H., Hagelaar, G., van der Velde, G., & Omta, S.W. F. (2021). Conceptualization of SMEs' business resilience: A systematic literature review. *Cogent Business & Management*, 8(1), 1938347. <https://doi.org/10.1080/23311975.2021.1938347>
- Sadghiani, N.S., Torabi, S.A., & Sahebjamnia, N. (2015). Retail supply chain network design under operational and disruption risks. *Transportation Research Part E: Logistics and Transportation Review*, 75, 95-114. <https://doi.org/10.1016/j.tre.2014.12.015>
- Scholten, K., & Schilder, S. (2015). The role of collaboration in supply chain resilience. *Supply Chain Management: An International Journal*, 20(4), 471-484. <https://doi.org/10.1108/SCM-11-2014-0386>
- Scholten, K., Stevenson, M., & van Donk, D.P. (2020). Dealing with the unpredictable: supply chain resilience. *International Journal of Operations and Production Management*, 40(1), 1-10. <https://doi.org/10.1108/IJOPM-01-2020-789>
- Shafi, M., Liu, J., & Ren, W. (2020). Impact of COVID-19 pandemic on micro, small, and medium-sized enterprises operating in Pakistan. *Research in Globalization*, 2, 100018. <https://doi.org/10.1016/j.resglo.2020.100018>
- Singh, R.K., Garg, S.K. & Deshmukh, S.G. (2008). Strategy development by SMEs for competitiveness: a review. *Benchmarking: An International Journal*, 15(5), 525–547. <https://doi.org/10.1108/14635770810903132>
- Smallbone, D., Deakins, D., Battisti, M., & Kitching, J. (2012). Small business responses to a major economic downturn: Empirical perspectives from New Zealand and the United Kingdom. *International Small Business Journal*, 30(7), 754-777. <https://doi.org/10.1177/0266242612448077>
- Sopha, B.M., & Hestiani, A. (2018). A case study of Indonesian SMEs: An empirical evidence of SCM practices and their impact on firm performance. *International Journal of Services Technology and Management*, 24(5/6), 394-413. <https://doi.org/10.1504/IJSTM.2018.094432>
- Sopha, B.M., Jie, F., & Himadhani, M. (2020). Analysis of the uncertainty sources and SMEs' performance. *Journal of Small Business & Entrepreneurship*, 33(1), 1-27. <https://doi.org/10.1080/08276331.2020.1764737>
- Supply Chain Movement (2020). *Coronavirus impact felt by 86% of supply chains*. Available at: https://www.supplychainmovement.com/coronavirus-impact-felt-by-86-of-supply-chains/?utm_source=SupplyChainMovementNews&utm_campaign=5f6d443e0df-NieuwsbriefEUb29bMarchb2020&utm_medium=email&utm_term=50_6d917e91b2-f6d443e0df-377252953 (Accessed: May 2020).
- Tang, C.S. (2006). Perspectives in supply chain risk management. *International Journal of Production Economics*, 103(2), 451-488. <https://doi.org/10.1016/j.ijpe.2005.12.006>
- Teece, D.J., (2007). Explicating dynamic capabilities: The nature and micro-foundations of (sustainable) enterprise performance. *Strategic Management Journal*, 28, 1319-1350. <https://doi.org/10.1002/smj.640>
- van der Vegt, G.S., Essens, P., Wahlström, M., & George, G. (2015). Managing risk and resilience, Editorial. *Academy of Management Journal*, 58(4), 971-980. <https://doi.org/10.5465/amj.2015.4004>
- van Hoek, R.(2020). Research opportunity for a more resilient post-COVID-19 supply chain – closing the gap between research findings and industry practice. *International Journal of Operations and Production Management*, 40(4), 341-355. <https://doi.org/10.1108/ijopm-03-2020-0165>
- Williams, T.A., Gruber, D.A., Sutcliffe, K.M., Shepherd, D.A., & Zhao, E.Y. (2017). Organizational Response to Adversity: Fusing Crisis Management and Resilience Research Streams. *Academy of Management Annals*, 11(2), 733. <https://doi.org/10.5465/annals.2015.0134>

Wishart, M. (2018). *Business resilience in an SME context: A literature review*. Enterprise Research Center (ERC).

Available at:

https://www.researchgate.net/publication/329453683_Business_resilience_in_an_SME_context_A_literature_review

(Accessed: January 2019).

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