SUSTAINABILITY GOVERNANCE OF THE FAST-MOVING CONSUMER GOODS INDUSTRY

Nkechi D. Neboh *, Thokozani P. Mbhele **

* *Corresponding author*, School of MIG, University of KwaZulu-Natal, Westville, South Africa
Contact details: School of MIG, University of KwaZulu-Natal, Westville, Private Bag X54001, Durban, South Africa
** School of MIG, University of KwaZulu-Natal, Westville, South Africa

OPEN ACCESS

How to cite this paper: Neboh, N. D., & Mbhele, T. P. (2022). Sustainability governance of the fast-moving consumer goods industry. *Journal of Governance & Regulation, 11*(3), 70–78.
https://doi.org/10.22495/jgrv11i3art7

ISSN Print: 2220-9352
ISSN Online: 2306-6784

Received: 19.01.2022
Accepted: 11.07.2022

JEL Classification: M1, M19, M2
DOI: 10.22495/jgrv11i3art7

Abstract

The supply chain disruptions have rattled the competitive positioning of the business environment. The fast-moving consumer goods (FMCG) industry is constantly battling to survive in the highly competitive business environment. The supply chain disruptions are manifested in the form of natural disasters, pandemics, and conflicts in society, or political changes or upheavals, however, the mantle of any business resonates with its magnitude of agility and resilience capabilities. Although resilience cushions disruptions and allows a cost-effective recovery into a better optimal state, the FMCG industry is epitomised by speedily demand responsiveness as a distinct resilience strategy. The purpose of the study was to investigate the relationship between supply chain resilience and supply chain agility in the retail industry. A quantitative research design and purposive sampling were employed to identify the respondents. The main findings revealed that relationships exist between resilience and supply chain agility. The paper tentatively implies that the fast-moving retail industry should entrench supply chain resilience and agility strategies in terms of alertness, visibility, and velocity.

Keywords: Fast-Moving Consumer Goods, Retail Supply Chain, Supply Chain Agility, Supply Chain Resilience, Visibility

Authors' individual contribution: Conceptualization — N.D.N.; Methodology — N.D.N.; Formal Analysis — N.D.N.; Investigation — N.D.N.; Resources — N.D.N.; Writing — N.D.N.; Supervision — T.P.M.

Declaration of conflicting interests: The Authors declare that there is no conflict of interest.

1. INTRODUCTION

The fast-moving consumer goods (FMCG) industry requires in sync supply chain configuration to sustain tough economic times emanating from disruptive events in the business environment. The impact of COVID-19, political trajectories, global warming effects and other events are weighing the capability of strategies on resilience, agility, and responsiveness underpinned by emerging technologies. Consumer spending on products and commodities signifies the early impact of supply chain disruptive events. These challenges are further compounded by labour unrest, insufficient provision for service delivery, and high unemployment, which may lead to crime increase in any country. The domino effect reflects severe financial setbacks for the entire network of supply chain members. Despite all this, customers are persistently demanding better product pricing, as well as quality, with positive service offerings. The disruptive flow of goods into retail stores emerges as supply chain issues disrupting set performance objectives and strategies. These challenges present a picture of the downstream side of the supply chain, being unable to be resilient in those precarious times when disruption occurs.

The magnitude of resilience in retailing is associated as being sustainable in a competitive business in terms of economic returns (Paulraj, 2011; Jraisat et al., 2021); and Yadav, Luthra, Jakhar, Mangla, and Rai (2020) concur that global competition has increased and expansion of supply chains to different borders becomes the norm due to globalisation. Although the paper observed that sustainable supply chain competitiveness is related

to a business's corporate governance and economic performance (Sabat & Krishnamoorthy, 2020), the paper contemplated ascertaining the interface between the magnitude of resilience and degree of agility in the supply chain retail industry. Mathu and Phetla (2018) noted that supply chain competitiveness, flexibility, and responsiveness are all related to agile supply chain initiatives. This study is set in South Africa, where about five retail giants of the FMCG industry compete daily for business survival. It is, therefore, essential that these retailers adapt to the capability at their disposal to ensure their positioning in the dynamic marketplace. The quest in the retail supply chain to reduce unforeseen disruptions prompts this research. This study aims to establish the alignment of the relationship between supply chain resilience and supply chain agility in the marketplace dynamics.

This paper first addresses the contingency theory (CT), the literature on South African retail supply chain, supply chain resilience, and supply chain agility followed by the research methodology. Lastly, the key results, managerial implications, future research, limitations, and conclusions are incorporated.

The structure of this paper is as follows: Section 2 reviews the relevant literature; Section 3 analyses the methodology that has been used to conduct empirical research on supply chain agility and resilience; Sections 4 and 5 outline the results and discussions; lastly, Section 6 concludes the study.

2. LITERATURE REVIEW

This section presents a literature review of the South African retail supply chain, supply chain agility, its dimensions, and supply chain resilience. Insights and literature from supply chain management journals were consulted while writing this paper. The contingency theory underpinned this study.

2.1. Previous studies

Several studies of operations management have used contingency theory such as in mass customisation (Huang, Kristal, & Schroeder, 2010), capacity planning (Tenhiälä, 2011) and buyer-supplier collaboration (Fawcett, Magnan, & Fawcett, 2010). Contingency theory has been used in leadership management (Suharyanto & Lestari, 2020), indicating that a specific situation determines a leader's effectiveness and well as how they adapt to the workplace. Contingency theory has been used by scholars for studying supply chain management by extending its application to the supply chain network design of retailing (Neboh, Mbhele, & Phiri, 2020). All these studies are similar in thoughts, especially in acknowledging that all business issues can be handled differently as highlighted in the contingency theory. This means that the conditions of a task and the people required to carry out a task must be involved to complete the job cycle. This paper is based on CT, as firms that function under complex and dangerous circumstances implement contingency plans that align with the internal and external factors (Neboh et al., 2020). The theory upholds an approach to the study of organisational behaviour on how contingent factors such as technology, culture and the external environment influence the design and function of organisations (Hanisch & Wald, 2012). The assumption underlying contingency theory is that no single type of structure of an organisation applies to every part of it. Rather, the organisational effectiveness depends on matching the type of technology, environmental volatility, organisation size and its information system. For an organisation to be agile and resilient, consideration must be given to the internal and external environment. In reflection, when businesses change their structure due to environmental contingencies, a varying change continually occurs in the contingencies, as the environment is constantly evolving. A contingency perspective is taken in this study as some disruptions in any business are never planned for. The frequency and magnitude of social insurgence, disaster occurrences, and volatile economy haunt the business environment daily. Contingencies increase the hazards that organisations such as the retail sector face, as well as weaken the functioning of a country. The major contribution of this paper lies in the occurrence of disruptions or an unanticipated event, as agility and resilience are both considered. Businesses such as retail need to continually have plans in place to deal with situations as disruptions unfold. Contingency theory aligns with the concepts of agility and resilience because being agile informs the ability to detect and react to threats in the environment; hence agility posits and supports contingency theory in terms of preparation or readiness for unforeseen circumstances. For resilience, contingency may mean allowing supply chains to bounce back quickly with less cost when perturbed by uncontrollable disruptions that may be triggered by natural disasters or exists in the external environment. With the global world ravaged by the emergence of the COVID-19 pandemic and businesses, such as retail, are reeling with the probability of facing closure due to hard lockdown and restrictions that borders every country, there is a need to examine the capabilities of retail agility and resilience to withstand and survive such disruption to ensure continuity. Hence, this article used the contingency theory to shed light on how firms understand their environment through supply chain agility and then build capabilities that enable resilience. This paper discusses the retail supply chain structure and strengthens the understanding of contingency strategies to build resilience and the agility to withstand unforeseen events.

2.2. Contingency theory

The contingency theory is claimed to be a class of behavioural theory, which advocated that a set of choices exist universally — optimally used in organising or leading an organisation to make decisions for its business. The theory's beliefs are that optimal assertions in a firm are dependent on internal or external factors and the best decisions made must relate to the setting where the firms find themselves (Talluri, Kull, Yildiz, & Yoon, 2013). This paper will be using CT, as the retail supply chain industry operates and conducts its businesses under turbulent and uncertain conditions in a dynamic environment, thus, harnessing

approaches whose appropriateness and effectiveness are subject to the internal and external environment of which the firm is exposed. CT suggested that when firms are fit, there must be a proper alignment amongst the organisational internal and external factors; and as the main contingency, supply chain disruptions occur internally and externally in an organisation. It is when the supply chain structure is radically transformed by unexpected man-made and natural occurrences that it affects many companies, shifting the whole network — or parts of it — hence this paper investigated the supply chain agility and resilience in the South African retail supply chain context. Therefore, organisations need to identify the best, easiest, and quickest way existing in their internal or external environment to ensure alignment between the variables of interest. Additionally, the contingency theory posits that decision-makers must take heed in recognising cause and effect relationships amongst the environmental and performance constructs (Kaviyani-Charati, Ghodsypour, & Hajiaghael-Keshteli, 2020).

Contingency theory is used to examine the relationship between supply chain agility and resilience since in maintaining supply chain continuity, retailers need to improve their internal plans, ensure customer demand fulfillment and reduce the external effect of risks on their operations. Although in this study, agility comprises different dimensions with varied influences, however, increasing any of the dimensions (visibility, velocity, and alertness) will help increase supply chain resilience by reducing risk and recovering quickly from disruptions. Generally, the more agile a supply chain, the more resilient the supply chain. Nevertheless, retail managers should closely pursue higher agility because improving agility means quicker turnaround and positioning of products in the marketplace and requires upstream and downstream enterprises to work together, despite the disruptions and finally resilience will be achieved.

2.3. Supply chain agility

Agility is known as the main source used to meet customers' requirements to achieve success. It is also a technique to achieve a competitive advantage in unforeseen events (Narayanan, Narasimhan, & Schoenherr, 2015). Moreover, Fernando and Saththasivam (2017) argued that agility is not just an objective but a necessity to remain competitive in the business world. In retailing, customers expect their needs to be met, prompting the need for retailers to align the strategy in their supply chain by offering agile services. There appear to be many measuring variations to supply chain agility, and these will be discussed below:

Many researchers conducted surveys on supply chain agility and proposed varied measuring dimensions. Gligor, Holcomb, and Stank (2013) highlighted that alertness, accessibility, decisiveness, swiftness and flexibility are the factors that influence supply chain agility. This paper uses the three dimensions purported by Christopher and Peck (2004) on supply chain agility using three factors: velocity, visibility, and alertness.

Velocity involves distance over time. This implies the total completion time it will take supply chain partners to transfer products from one place to another in the supply chain (delivery to customers).

Visibility is the skill to visualise one end of the supply chain to the other. Supply chain visibility infers having a complete judgment of the inventories that comes from the upstream and downstream side of the supply chain, such as inventories and production. This implies having a close collaboration amid supply chain partners, customers, and suppliers where information can be shared.

Alertness refers to the skill to perceive changes, opportunities, and coercions quickly in businesses and the supply chain. When shocks are encountered in businesses such as fluctuations in the economy, supply chains scan the environment through anticipating their opponent's movement, predicting their actions before it is carried out, and executing agile tasks in response to that action by changing the direction of their business.

The basic principle to creating agility is for the partners in a supply chain to fuse their collective capabilities with changing market and customer demand (Gligor, 2013). It is known that as the market changes, firms tend to react to this change by being flexible in their operations. In as much as businesses continually put-up effort to operate normally, external influences are always presenting challenges that can unbalance this equilibrium. In the context of this study, the retail supply chain ensures the availability of daily staple products to satisfy human needs; therefore, the need arises to ratify the importance of resilience in businesses such as retail, a capability that keeps a handle on business disruption and survival.

2.4. Supply chain resilience

The resilience concept is becoming the most critical research area in the supply chain as it can endure adverse impacts of disruptive events (Brandon-Jones, Squire, Autry, & Petersen, 2014; Carvalho, Azevedo, & Cruz-Machado, 2012; Das & Lashkari, 2015; Xiao, Yu, & Gong, 2012). Only a few studies on supply chain resilience have been empirically reported (Scholten & Schilder, 2015), with most of them carried out in the developed country, for instance in Western Europe and America (Golgeci & Ponomarov, 2013). Although developing countries also experience supply chain disruptions, it is sparingly represented (Chika, Bello, Jimoh, & Umar, 2011). According to Park (2017), contingency plans, building resilience, and predictability in a supply chain are important to avoid disruption. Researchers have studied resilience and suggested strategies for achieving it. To that end, Christopher and Peck (2004) presented the principles of resilience: re-engineering, risk management culture, agility, and collaboration.

Irrespective of the industry, resilience has become a phenomenon that cannot be overlooked as it can reduce some, if not all, the negativities in a business environment. Resilience sits in the corporate strategy of an organisation, and it is all about businesses staying at the same operating level or a little bit below the threshold, whereby

the business will not be affected. Resilience means that as businesses hit powerful external forces, such as recessions, they will step down a bit but continue operating. This study describes the kind of situation a business can be in when all these factors in the economy and environment are changing all the time. The resilience concept is useful in examining the retail sector as it would often guide the industry to maintain its business, bounce back quickly, and continue functioning despite fluctuating environmental conditions encountered. This study investigated whether building resilience would allow the retail sector to operate at a level that will not affect its structures and other organisational configuration through agility; the retail industry needs to bypass this dynamism in the economy and be upfront on the way forward. According to Manfield and Newey (2015), it is not an option for a firm to be resilient, but rather a critical quality that must be developed to attain a competitive advantage even in adverse conditions. Most studies (Al-Zabidi, Ur Rehman, & Alkahtani, 2021; Zsidisin & Wagner, 2010) have separately discussed the edge that supply chain resilience has over disruptions and the capability of agility to sense and respond quickly to supply chain market demand dynamics as well remain sustainable, however, none has summarily debated on the relationship between these two concepts. Against this background, this study will investigate and present an empirical analysis of this association with the recommendation to retailers towards optimal management of their business operations.

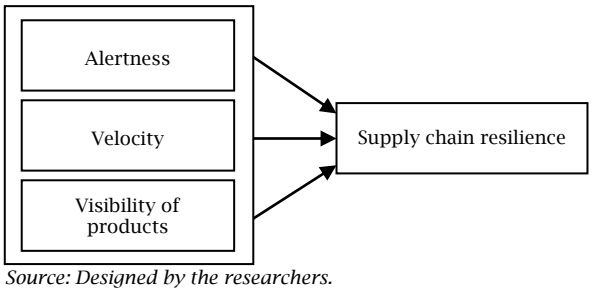
2.5. Relationship between supply chain resilience and supply chain agility

It was suggested by Mandal (2012), that in exploring ways to make a supply chain resilient, firms rely on information technology helping in the daily implementation of solutions to strategic problems. The author argued that the better enabler of supply chain agility is information technology. In as much as stocking up of products was advocated for in the lean approach, being agile in responding to consumer demands can obviously create an opportunity to retain customer loyalty as well as gain a competitive advantage. As defined by Ponomarov and Holcomb (2009), supply chain resilience is the supply chain adaptive capability to prepare for unexpected occurrences, respond to disruptions, as well as recover from them through continuity of the business operations at the optimal level of control over the structural and functional structure of the organisation. True supply chain resilience is not just concerned about mitigation and avoidance but about growth and competitive advantage (Rahman, 2017) and the ability to manage risks and to manage damages better than their competitors. Christopher and Peck (2004) see resilience as the system's ability to return to its original state and transcend to a novel and more desirable state after being disturbed. The scholars concluded that resilience implies flexibility and agility. Therefore, this paper's main hypothesis is:

H1: There is a relationship between supply chain agility and supply chain resilience.

This paper is underpinned by the proposed conceptual framework deduced from the literature review in Figure 1 below:

Figure 1. Conceptual framework of supply chain agility and supply chain resilience



Source: Designed by the researchers.

3. MATERIALS AND METHODS

3.1. Procedures and participants

This study is descriptive research patterned using a survey. Daniel (2012) asserts that research design involves a step-by-step guideline of the research, summarising approaches to explain the research problems. This study questioned the association between supply chain resilience and supply chain agility in the retail industry. The effects of supply chain agility were tested in terms of various variables. For the study, the pragmatist philosophy was employed. It is a set of ideas supported by many people, that values subjective and objective knowledge. The pragmatist approach to be used in this study is the quantitative approach where data was collected using questionnaires that were administered to the supervisors and managers/store owners of the selected retail stores as they have the expert knowledge due to experience and possession of facts on the concept of investigation. Alternatively, the mixed methodology was an option that could be used to conduct this study as it creates wider access to information from respondents. Generally, quantitative studies facilitated the idea of testing the relationship that may exist amongst concepts. The unit of analysis is the individually selected retail stores with a target population of 1509, which is the number of retail supermarkets stores in Durban, South Africa, the figure adapted from (Cooper & Schindler, 2014; Mbhele, 2014; Statistics South Africa, 2018; Sekaran & Bougie, 2011). Three hundred respondents contributed to the study, drawn from a sample size of 306. An informed consent letter was sent to the participants and confirmation of their voluntary participation in the investigation was obtained. The instrument was then hand-delivered to the stores supervisors to assist in distributing to their staff. The researcher informed the liaison staff of the anonymity of the respondents and the data collection was concluded in three weeks. As this study employed the quantitative research design, it used the non-probability sampling design which aligns with the purposive sampling type known as judgment sampling. Daniel (2012) reports that participants in a study are selected because of their knowledge and expertise and not because of being available. This is because when selecting individuals with the same ideology, they provide the actual

information required (Taherdoost, 2017). The sampling frame of the study included the selected retail stores.

3.2. Data collection and data analysis

3.2.1. Measures

In the questionnaire, Section A comprised seven demographic questions, and Section B — twenty-two questions, focusing on supply chain design and resilience. The concept of supply chain resilience and the three constructs of supply chain agility (velocity, alertness, and visibility of products) were measured on a five-point Likert scale and adapted from Christopher and Peck (2004). In this study, the authors measured supply chain agility in terms of speed, reliability, and quality of service. The authors stated that supply chain agility measures require measuring metrics that access the speed of services rendered to customers (velocity), the readiness to market (alertness), and the visibility of products along the supply chain (quality of service offerings) given a clear view of inventories and production. These three dimensions of agility allow for greater responsiveness on the path of a business. This is done to realise the actual level of agility insured in a supply chain against the risks of conducting a business. The five-point Likert scale ranges from 1 (strongly disagree) to 5 (strongly agree).

3.2.2. Data analysis

The collected data was analysed using SPSS version 23 software. The bivariate and multivariate statistical analyses were conducted to authenticate the outcomes. An ethical clearance letter was issued by the academic institution for the study. When it comes to correlation and the *r*-value is close to zero, the correlation coefficient is not significant. When the *r*-value is significantly different from zero, the correlation coefficient is significant, and a relationship exists between two variables. Both coefficients range from -1 to +1, and the association between variables becomes stronger as the coefficient approaches an absolute value of 1 (Schober, Boer, & Schwarte, 2018).

4. RESULTS

This section discusses the analysis conducted on the study based on the correlation between supply chain agility and resilience as well as the multiple regression analysis.

Table 1. Descriptive statistics

Supply chain resilience and agility	*Mean*	*Std. deviation*	*N*
Supply chain resilience	4.47	0.681	300
Supply chain agility variables			
Visibility of products	4.32	0.641	300
Alertness	4.36	0.787	300
Velocity	4.36	0.657	300

Source: Designed by the researchers from SPSS output.

Table 2. Correlations on supply chain agility and resilience

Correlation	*Supply chain resilience*	*Visibility of products*	*Alertness*	*Velocity*
Supply chain resilience Pearson correlation	1	0.176	0.367	0.126
Sig. (2-tailed)		0.002	0.000	0.029
Visibility of products Pearson correlation	0.176	1	0.410	0.554
Sig. (2-tailed)	0.000		0.000	0.000
Alertness Pearson correlation	0.367	0.410	1	0.421
Sig. (2-tailed)	0.000	0.000		0.000
Velocity Pearson correlation	0.126	0.421	0.554	1
Sig. (2-tailed)	0.007	0.000	0.000	

Source: Designed by the researchers from SPSS output.

The quantitative analysis results presented alertness, velocity, and visibility of products as factors of supply chain agility that contribute to the variance in supply chain resilience. Table 2 presents the intercorrelation amongst the test items of supply chain agility and resilience. The outcome shows that alertness and velocity have the highest mean scores (M = 4.36), however, alertness contributed more to supply chain resilience with a standard deviation of 0.787 than velocity with a score of 0.657. In other words, retail businesses must always be alerted to detect opportunities and threats in the environment. Additionally, the business may react significantly to increases and decreases in demand as fast as the market requires. This translates to the idea that when the economy changes, retail businesses may be forced to readjust the cost of their products. The findings indicate that the retail business appears to adjust output to quickly match demand from customers. This suggests that the urge to innovate with changing market demand is a good strategy for the retail business, which can drive future revenue growth. The velocity to address market demand for good services by the retailers and ensure quick customer service allows optimal performance and profitability. The findings also show that the variable (visibility of products) has a mean score of (M = 4.32). Visibility is the ability of supply chains to scan their environment and take advantage of opportunities such as product differentiation from competitors (Lintukangas, Kähkönen, & Hallikas, 2019).

For the correlation analysis, a 4×4 matrix was populated between supply chain resilience and the variables of supply chain agility. A statistically significant connection exists between supply chain resilience and supply chain alertness ($x^2(2) = 0.367$); supply chain resilience and visibility of products

($x^2(2) = 0.176$); supply chain resilience and velocity ($x^2(2) = 0.126$) placed in their order of severity. The findings also showed that the correlation value of the variables of supply chain agility is all less than 0.5, an indication of a low correlation. As pointed out by Schober et al. (2018), a correlation is significant when the *r*-value is significantly different from zero, hence the null hypothesis is rejected. Therefore, there is statistical evidence to support the claim that supply chain agility relates to retail resilience.

5. DISCUSSION

The study has to do with the ways the retail supply chain becomes agile to adapt to some changes in the marketplace and transform into a resilient system that can withstand unforeseen disruptions. The capability to adjust operations quickly to achieve a desired outcome or level in retail business creates agility. Moreover, one of the key necessities to contest in the twenty-first century is the ability to implement change (Malekifar, Taghizadeh, Rahman, & Rehman Khan, 2014). A supply chain can be said to be agile when it consistently delivers goods to end consumers and continue with business operations, despite any disruptions. To be relevant in an ever-changing dynamic environment such as retail, supply chain partners need constant scanning, reaction, and adapting to a potential threat of disruptions to the supply chain. Varied opinions or perspectives on what an agile supply chain is, exist, such as agility can be viewed in terms of a source of competitive differentiation and long-term organisation's sustainability (Blome, Schoenherr, & Rexhausen, 2013) and a business-wide capability (Tenhiälä, 2011) that can better synchronise demand with supply (Agarwal, Shankar, & Tiwari, 2006). It can be argued that agility operates at the strategic level of an organisation as a complete business capability that can handle change, uncertainty, and market turbulence using market intelligence to exploit opportunities and remain competitive. It can also be argued that as retailers conduct their business in an environment characterised by a high degree of complexity and uncertainty, implementing an agile system leverages competitiveness. Literature also suggests that agility is capable of handling volatility and uncertainty (Charles, Lauras, & Van Wassenhove, 2010). To successfully meet consumer demand, supply chains need to be flexible and ultimately reduce overall cost in the alignment of supply and demand in the business. The key findings have highlighted how supply chain agility, and its dimensions, are contributory to supply chain resilience. Flexibility itself amplifies supply chain agility as businesses operate optimally, despite changes in operational conditions. It is evident that strategic sourcing positively influences an organisation's flexibility and supply chain agility (Chiang, Kocabasoglu-Hillmer, & Suresh, 2012). For business continuity, supply chains must internalise strategic objectives and work with their main suppliers and customers to speedily adapt and respond to these changes in the marketplace (Chiang et al., 2012). As the literature suggests, the basic tenet is to align communal capabilities to better respond to market fluctuations and customer demand (Yadav et al., 2020), as collaboration is a source of supply chain agility (Fayezi, Zutshi, & O'Loughlin, (2017), and a key element for competitive markets survival (Kim & Chai, 2017).

Furthermore, alertness involves amassing information and sensing identifiable and plausible changes (Sharma, Sahay, Shankar, & Sarma, 2017) in a marketplace or business environment. Alertness can be related to acting faster than the competitors in businesses through varied interests for the common good of all supply chain partners. It entails responsiveness, which relates to the speed at which things get done. The findings acknowledged that it is important that retail stores become responsive enough to avoid losing their customers to competitors. The availability of products supports a responsive supply chain as consumers constantly patronise the store due to their needs being met. Nonetheless, early detection of changes in a retail business environment of imminent coercions or even opportunities, and the ability to take advantage of it, differentiates an agile supply chain from another. This can be in the form of real consumer demand information as climate change affects food production (Ddamulira, 2019) or shortages in the supply of products and monitoring of daily point of sale (POS) data in stores (Gligor, 2013). As information is received from consumers, the expectations are such that it is shared with upstream partners for better access, synchronisation, and streamlining of mutual ideas through collaboration. The increase in alertness ensures that even amid a crisis, retail supply chains are able to liaise with their stakeholders and ensures that their businesses are ready in terms of risk mitigation and measures to be undertaken in cases of unforeseen eventualities. Furthermore, velocity involves the rapidity at which decisions are implemented in a supply chain to achieve desired outcomes. Achieving these outcomes may require retailers to reconfigure their supply chains. Reconfiguring the supply chain resources to respond to environmental fluctuations, threats, and opportunities will amass huge benefits for the retail stores. The pace of changing adaptations in retail will entail how quick and critical decisions are implemented to trigger a positive response in the supply chain. In instances of disruptions, the degree and extent of change adoption in the retail business will include management's constant monitoring and effective implementation of best practices. Meanwhile, the study findings showed that the potency of visibility in influencing the supply chain's resilience in the retail stores has a positive correlation and is still significant in an agile system. For instance, technology has empowered consumers through social media platforms, as ordered goods or products can be traced and tracked online to determine their status before it is physically delivered. This is the power of visibility technology of an agile system that can provide online instant real-time information in the world today to all stakeholders in a supply chain. Agility must be built into an organisation's supply chain (Tuan, 2016) as well as resilience against any unforeseen disruptions. The environment where retail businesses exist is constantly evolving, affected by the imbalance of the economy, and pressured to carry out sustainable practices. According to Rodrigues, Franco, Sousa,

and Silva (2021), sustainability and resilience share common aims and approaches. Despite this, both concepts have been tested, as the world recently experienced supply chain disruptions caused by the COVID-19 pandemic (Chesbrough 2020; Ivanov, 2020). Retail businesses find it difficult to transport goods from one place to another as lockdown restrictions have been imposed to curb the effect of the COVID-19 pandemic. Therefore, to be agile is to think fast and grasp every opportunity to stay relevant, hence transcending to become resilient in business. The key to recovery, as well as demand-sensitive action against disruptions with preventive solutions, is supply chain resilience. The implication of this study is that supply chain retailers and stakeholders should take into consideration the influences of the macro-environment factors on retail businesses, commit to sustainable practices, and become agile through building supply chain resilience to reduce or eliminate disruptions completely. Furthermore, this study can cause retailers to have a better understating of the relationship between the concepts of agility and its value in enabling the stability of the supply chain. For supply chain resilience, most previous studies were qualitative but were empirically investigated in this study. Furthermore, managers need to ensure that their supply chain has the capabilities to change as the need arises and this calls for the concept of agility as a critical resource in creating a resilient retail supply chain.

6. CONCLUSION

In the retail supply chain context, retailers need to be able to have feed-forward information from their customers, on their requirements, to have the right inventory supplied. This is because customers need changes all the time; hence, it is difficult to predict daily demand. For business continuity, supply chains must internalise strategic objectives and work with their main suppliers and customers to speedily adapt and respond to these changes in the marketplace. To be agile, in the context of this study, entails those activities are conducted, decisions implemented, and operations executed as fast as possible within a specified period, as any error can cost their market positioning. The three variables of supply chain agility were significant and contributed to the variance in supply chain resilience. In conclusion, alertness involves the tenacity of the retail supply chain to continually scan its environment, enables it to monitor disruption propensity, and create measures to mitigate such by building resilience. Secondly, retail industries need to demonstrate agile practices and skills to take up opportunities as it occurs and address threats accordingly. Proper actions taken, before disruption times, help to reduce cost and mobilise resources associated; for instance, redistributing resources according to demand to serve facilities with inventory shortages at the occurrence of unanticipated events. Alertness can be related to acting faster than the competitors in businesses through varied interests for the common good of all supply chain partners. Nonetheless, the early detection of changes in a retail business environment of imminent coercions or even opportunities, and the ability to take advantage of it, differentiates an agile supply chain from another. In addition, velocity implies that completing an activity as quickly as possible may result in more profit for retailers through accelerated activities and carrying out operations in the quickest time. Agility must be incorporated into a supply chain and be customer responsive and fast in the delivery of products to end consumers. Therefore, supply chain agility contributes to a resilient system. This paper is important for future research as it sets a guide for retailers on the governance operations in their business. The retail business operation needs to be overhauled in readiness for any disruption. Further studies should adopt a longitudinal approach in testing other principles of supply chain resilience and even from other industry viewpoints. The sampling of the study was limited to the giant retailers (a fraction represented in this study) and was conducted in one province only; however, the results are generalisable. Furthermore, the methodology used in the paper was only quantitative.

REFERENCES

1. Agarwal, A., Shankar, R., & Tiwari, M. K. (2006). Modeling the metrics of lean, agile and leagile supply chain: An ANP-based approach. *European Journal of Operational Research*, *173*(1), 211–225. https://doi.org/10.1016/j.ejor.2004.12.005
2. Al-Zabidi, A., Ur Rehman, A., & Alkahtani, M. (2021). An approach to assess sustainable supply chain agility for a manufacturing organization. *Sustainability*, *13*(4), 1752. https://doi.org/10.3390/su13041752
3. Hanisch, B., & Wald, A. (2012). A bibliometric view on the use of contingency theory in project management research. *Project Management Journal, 43*(3), 4–23. https://doi.org/10.1002/pmj.21267
4. Blome, C., Schoenherr, T., & Rexhausen, D. (2013). Antecedents and enablers of supply chain agility and its effect on performance: A dynamic capabilities perspective. *International Journal of Production Research*, *51*(4), 1295–1318. https://doi.org/10.1080/00207543.2012.728011
5. Brandon-Jones, E., Squire, B., Autry, C. W., & Petersen, K. J. (2014). A contingent resource-based perspective of supply chain resilience and robustness. *Journal of Supply Chain Management*, *50*(3), 55–73. https://doi.org/10.1111/jscm.12050
6. Brusset, X. (2016). Does supply chain visibility enhance agility? *International Journal of Production Economics*, *171*(1), 46–59. https://doi.org/10.1016/j.ijpe.2015.10.005
7. Cabral, I., Grilo, A., & Cruz-Machado, V. (2012). A decision-making model for lean, agile, resilient and green supply chain management. *International Journal of Production Research, 50*(17), 4830–4845. https://doi.org/10.1080/00207543.2012.657970
8. Carvalho, H., Azevedo, S. G., & Cruz-Machado, V. (2012). Agile and resilient approaches to supply chain management: Influence on performance and competitiveness. *Logistics Research*, *4*, 49–62. https://doi.org/10.1007/s12159-012-0064-2

9. Charles, A., Lauras, M., & Van Wassenhove, L. (2010). A model to define and assess the agility of supply chains: Building on humanitarian experience. *International Journal of Physical Distribution & Logistics Management*, *40*(8–9), 722–741. https://doi.org/10.1108/09600031011079355
10. Chesbrough, H. (2020). To recover faster from Covid-19, open up: Managerial implications from an open innovation perspective. *Industrial Marketing Management, 88*, 410–413. https://doi.org/10.1016/j.indmarman.2020.04.010
11. Chiang, C.-Y., Kocabasoglu-Hillmer, C., & Suresh, N. (2012). An empirical investigation of the impact of strategic sourcing and flexibility on firm's supply chain agility. *International Journal of Operations & Production Management*, *32*(1), 49–78. https://doi.org/10.1108/01443571211195736
12. Chika, A., Bello, S. O., Jimoh, A. O., & Umar, M. T. (2011). The menace of fake drugs: Consequences causes and possible solutions. *Research Journal of Medical Sciences*, *5*(5), 257–261. https://doi.org/10.3923/rjmsci.2011.257.261
13. Christopher, M. (2000). The agile supply chain: Competing in volatile markets. *Industrial Marketing Management*, *29*(1), 37–44. https://doi.org/10.1016/S0019-8501(99)00110-8
14. Christopher, M., & Peck, H. (2004). Building the resilient supply chain. *The International Journal of Logistics Management, 15*(2), 1–14. https://doi.org/10.1108/09574090410700275
15. Cooper, D. R., & Schindler, P. S. (2014). *Business research methods* (12th ed.). New York, NY: McGraw-Hill/Irwin.
16. COVID-19 pandemic will put sustainability concerns on hold, says GlobalData. (2020, April 6). *GlobalData*. Retrieved from https://www.globaldata.com/covid-19-pandemic-will-put-sustainability-concerns-on-hold-says-globaldata/
17. Daniel, J. (2012). *Sampling essentials: Practical guidelines for making sampling choices*. Thousand Oaks, CA: Sage. https://doi.org/10.4135/9781452272047
18. Das, K., & Lashkari, R. S. (2015). Risk readiness and resiliency planning for a supply chain. *International Journal of Production Research, 53*(22), 6752–6771. https://doi.org/10.1080/00207543.2015.1057624
19. Ddamulira, R. (2019). Governing climate change for sustainable food production: A case study of emerging markets. *Corporate Governance and Sustainability Review, 3*(2), 64–75. https://doi.org/10.22495/cgsrv3i2p7
20. Fawcett, S. E., Magnan, G. M., & Fawcett, A. M. (2010). Mitigating resisting forces to achieve the collaboration-enabled supply chain. *Benchmarking: An International Journal*, *17*(2), 269–293. https://doi.org/10.1108/14635771011036348
21. Fayezi, S., Zutshi, A., & O'Loughlin, A. (2017). Understanding and development of supply chain agility and flexibility: A structured literature review. *International Journal of Management Reviews*, *19*(4), 379–407. https://doi.org/10.1111/ijmr.12096
22. Fernando, Y., & Saththasivam, G. (2017). Green supply chain agility in EMS ISO 14001 manufacturing firms: Empirical justification of social and environmental performance as an organisational outcome. *International Journal of Procurement Management*, *10*(1). https://doi.org/10.1504/IJPM.2017.080911
23. Gligor, D. M. (2013). *The concept of supply chain agility: Conceptualization, antecedents, and the impact on firm performance* (Doctoral dissertation, University of Tennesse). Retrieved from https://trace.tennessee.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=2881&context=utk_graddiss
24. Gligor, D. M., & Holcomb, M. C. (2012). Understanding the role of logistics capabilities in achieving supply chain agility: A systematic literature review. *Supply Chain Management*, *17*(4), 438–453. https://doi.org/10.1108/13598541211246594
25. Gligor, D. M., Holcomb, M. C., & Stank, T. P. (2013). A multidisciplinary approach to supply chain agility: Conceptualization and scale development. *Journal of Business Logistics*, *34*(2), 94–108. https://doi.org/10.1111/jbl.12012
26. Golgeci, I., & Ponomarov, S. Y. (2013). Does firm innovativeness enable effective responses to supply chain disruptions? An empirical study. *Supply Chain Management*, *18*(6), 604–617. https://doi.org/10.1108/SCM-10-2012-0331
27. Hallavo, V. (2015). Superior performance through supply chain fit: A synthesis. *Supply Chain Management, 20*(1), 71–82. https://doi.org/10.1108/SCM-05-2014-0167
28. How to pursue sustainability during COVID-19: A tactical guide for brand professionals. (2020, April 3). *Sustainable Brands*. Retrieved from https://sustainablebrands.com/read/walking-the-talk/how-to-pursue-sustainability-during-covid-19-a-tactical-guide-for-brand-professionals
29. Huang, X., Kristal, M. M., & Schroeder, R. G. (2010). The impact of organizational structure on mass customization capability: A contingency view. *Production and Operations Management*, *19*(5), 515–530. https://doi.org/10.1111/j.1937-5956.2009.01117.x
30. Hübner, A. H., Kuhn, H., & Sternbeck, M. G. (2013). Demand and supply chain planning in grocery retail: An operations planning framework. *International Journal of Retail & Distribution Management, 41*(7), 512–530. https://doi.org/10.1108/IJRDM-05-2013-0104
31. Ittmann, H. W. (2007). *The third annual state of logistics survey for South Africa, 2006: Implementing logistics strategies in a developing economy* (CSIR Survey). Retrieved from https://researchspace.csir.co.za/dspace/handle/10204/1139
32. Ivanov, D. (2020). Viable supply chain model: Integrating agility, resilience and sustainability perspectives — Lessons from and thinking beyond the COVID-19 pandemic. *Annals of Operations Research.* https://doi.org/10.1007/s10479-020-03640-6
33. Jones, P., & Comfort, D. (2020). A commentary on the COVID-19 crisis, sustainability and the service industries. *Journal of Public Affairs, 20*(4), e2164. https://doi.org/10.1002/pa.2164
34. Jraisat, L., Upadhyay, A., Ghalia, T., Jresseit, M., Kumar, V., & Sarpong, D. (2021). Triads in sustainable supply-chain perspective: Why is a collaboration mechanism needed? *International Journal of Production Research.* https://doi.org/10.1080/00207543.2021.1936263
35. Kaviyani-Charati, M., Ghodsypour, S. H., & Hajiaghael-Keshteli, M. (2020). Impact of adopting quick response and agility on supply chain competition with strategic customer behavior. *International Journal of Science & Technology, 29*(1), 387–411. https://doi.org/10.24200/sci.2020.53691.3366
36. Kim, M., & Chai, S. (2017). The impact of supplier innovativeness, information sharing and strategic sourcing on improving supply chain agility: Global supply chain perspective. *International Journal of Production Economics*, *187*, 42–52. https://doi.org/10.1016/j.ijpe.2017.02.007

37. Lintukangas, K., Kähkönen, A.-K., & Hallikas, J. (2019). The role of supply chain management innovativeness and supplier orientation in firms' sustainability performance. *Journal of Purchasing and Supply Management, 25*(4), 100558. https://doi.org/10.1016/j.pursup.2019.100558
38. Malekifar, S., Taghizadeh, S. K., Rahman, S. A., & Rehman Khan, S. U. (2014). Organizational culture, IT competence, and supply chain agility in small and medium-size enterprises. *Global Business and Organizational Excellence, 33*(6), 69–75. https://doi.org/10.1002/joe.21574
39. Mandal, S. (2012). An empirical investigation into supply chain resilience. *The IUP Journal of Supply Chain Management*, *9*(4), 46–61.
40. Manfield, R., & Newey, L. (2015). Escaping the collapse trap: Remaining capable without capabilities. *Strategic Change: Briefings in Entrepreneurial Finance, 24*(4), 373–387. https://doi.org/10.1002/jsc.2016
41. Mathu, K., & Phetla, S. (2018). Supply chain collaboration and integration enhance the response of fast-moving consumer goods manufacturers and retailers to customer's requirements. *South African Journal of Business Management*, *49*(1), 1–8. https://doi.org/10.4102/sajbm.v49i1.192
42. Mbhele, T. P. (2014). *Electronic supply chain management systems in managing the bullwhip effect on selected fast moving consumer goods* (Doctoral dissertation, University of KwaZulu-Natal). Retrieved from http://hdl.handle.net/10413/12483
43. Narayanan, S., Narasimhan, R., & Schoenherr, T. (2015). Assessing the contingent effects of collaboration on agility performance in buyer-supplier relationship. *Journal of Operations Management*, *33–34*(1), 140–154. https://doi.org/10.1016/j.jom.2014.11.004
44. Neboh, N. D., Mbhele, T. P., & Phiri, M. (2020). *Retail supply chain design for resilience: Selected Durban supermarkets* (Doctoral dissertation, University of KwaZulu-Natal).
45. Park, M. (2017, January 12). #BizTrends2017: What does 2017 hold for supply chains? *Bizcommunity*. Retrieved from https://www.bizcommunity.com/Article/196/729/156078.html
46. Paulraj, A. (2011). Understanding the relationships between internal resources and capabilities, sustainable supply management and organizational sustainability. *Journal of Supply Chain Management*, *47*(1), 19–37. https://doi.org/10.1111/j.1745-493X.2010.03212.x
47. Ponomarov, S. Y., & Holcomb, M. C. (2009). Understanding the concept of supply chain resilience. *The International Journal of Logistic Management*, *20*(1), 124–143. https://doi.org/10.1108/09574090910954873
48. Rahman, M. S. (2017). The advantages and disadvantages of using qualitative and quantitative approaches and methods in language "testing and assessment" research: A literature review. *Journal of Education and Learning, 6*(1), 102–112. https://doi.org/10.5539/jel.v6n1p102
49. Rimienė, K. (2011). Supply chain agility concept evolution. *Economic and Management*, *16*, 892–899. Retrieved from https://docplayer.net/59177133-Supply-chain-agility-concept-evolution.html
50. Rodrigues, M., Franco, M., Sousa, N., & Silva, R. (2021). Reviewing COVID-19 literature on business management: What it portends for future research? *Sustainability, 13*(11), 5995. https://doi.org/10.3390/su13115995
51. Sabat, K. C., & Krishnamoorthy, B. (2020). Sustainable supply chain management practices and their mediation effect on economic returns. *Corporate Governance and Sustainability Review, 4*(1), 8–20. https://doi.org/10.22495/cgsrv4i1p1
52. Schober, P., Boer, C., & Schwarte, L. A. (2018). Correlation coefficients: Appropriate use and interpretation. *Anesthesia & Analgesia, 126*(5), 1763–1768. https://doi.org/10.1213/ANE.0000000000002864
53. Scholten, K., & Schilder, S. (2015). The role of collaboration in supply chain resilience. *Supply Chain Management*, *20*(4), 471–484. https://doi.org/10.1108/SCM-11-2014-0386
54. Sekaran, U., & Bougie, R. (2011). *Research methods for business: A skill-building approach* (5th ed.). Hoboken, NJ: Wiley Publication.
55. Sharma, N., Sahay, B. S., Shankar, R., & Sarma, P. R. S. (2017). Supply chain agility: Review, classification and synthesis. *International Journal of Logistics Research and Applications*, *20*(6), 532–559. https://doi.org/10.1080/13675567.2017.1335296
56. Statistics South Africa. (2018). *Five facts about the retail trade industry*. Retrieved from https://www.statssa.gov.za/?p=11101
57. Suharyanto, A., & Lestari, R. D. (2020). The fall and rise of the contingency theory of leadership. *2020 Iapa Annual (Virtual) International Conference Proceedings, 479–496*. https://doi.org/10.30589/proceedings.2020.423
58. Swafford, P. M., Ghosh, S., & Murthy, N. (2006). The antecedents of supply chain agility of a firm: Scale development and model testing. *Journal of Operations Management*, *24*(2), 170–188. https://doi.org/10.1016/j.jom.2005.05.002
59. Taherdoost, H. (2017). Determining sample size; How to calculate survey sample size. *International Journal of Economics and Management Systems*, *2*, 237–239. Retrieved from https://www.iaras.org/iaras/filedownloads/ijems/2017/007-0032(2017).pdf
60. Talluri, S., Kull, T. J., Yildiz, H., & Yoon, J. (2013). Assessing the efficiency of risk mitigation strategies in supply chains. *Journal of Business Logistics*, *34*(4), 253–269. https://doi.org/10.1111/jbl.12025
61. Tenhiälä, A. (2011). Contingency theory of capacity planning: The link between process types and planning methods. *Journal of Operations Management*, *29*(1–2), 65–77. https://doi.org/10.1016/j.jom.2010.05.003
62. Tuan, L. T. (2016). Organisational ambidexterity and supply chain agility: The mediating role of external knowledge sharing and moderating role of competitive intelligence. *International Journal of Logistics Research and Applications*, *19*(6), 583–603. https://doi.org/10.1080/13675567.2015.1137278
63. Xiao, R., Yu, T., & Gong, X. (2012). Modeling and simulation of ant colony's labor division with constraints for task allocation of resilient supply chains. *International Journal on Artificial Intelligence Tools*, *21*(3), 1–19. https://doi.org/10.1142/S0218213012400143
64. Yadav, G., Luthra, S., Jakhar, S. K., Mangla, S. K., & Rai, D. P. (2020). A framework to overcome sustainable supply chain challenges through solution measures of industry 4.0 and circular economy: An automotive case. *Journal of Cleaner Production, 254*, 120112. https://doi.org/10.1016/j.jclepro.2020.120112
65. Zsidisin, G. A., & Wagner, S. M. (2010). Do perceptions become reality? The moderating role of supply chain resiliency on disruption occurrence. *Journal of Business Logistics*, *31*(2), 1–20. https://doi.org/10.1002/j.2158-1592.2010.tb00140.x