



# Supply chain disruptions in the fast-moving consumer goods industry



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**Background:** The fast-moving consumer goods (FMCG) industry is a key sector in the South African economy. In this context, designing disruption-management strategies for a robust supply chain has become a critical worldwide issue that is still under-explored in the FMCG industry.

**Objectives:** The study investigated the supply-chain disruptions in the South African FMCG industry

**Setting:** The study was conducted mainly among the supermarket chains, hypermarkets or super stores, department stores, pharmacy chains, general dealers and speciality stores across South Africa.

**Method:** This was an exploratory qualitative study that employed interviews as the data-collection method. Twenty supply chain professionals were purposely selected on the basis of their experience and expertise in supply chain management within the FMCG industry. Thematic analysis was used as a method for data analysis.

**Results:** Six main themes emerged from the primary data and these included competitive market environment, geopolitics, automated distribution centres, natural disasters, rise of nationalistic sentiments and acute skills shortages.

**Conclusion:** The findings pointed to many uncertainties in the South African FMCG and retail industry and the study proposed possible resilient strategies to counter these disruptions.

**Contribution:** The first of the study's suggested practical contributions is a framework for supply chain disruptions in the FMCG industry.

**Keywords:** supply chain disruptions; supply chain resilience; FMCG industry; uncertainty framework theory.

## Introduction

### Background

The global and local business environment is experiencing supply-chain disruptions on a scale never seen before (Blackhurst, Dunn & Craighead 2011). Owing to unplanned disruptive occurrences, supply networks have become increasingly unstable, compromising a company's ability to gain a competitive market edge and boost profitability (Butt 2021). Supply-chain managers need to be aware of supply-chain disruptions as they can be costly and the goods and services lost can have a negative impact on the entire supply chain (Benton 2020). Unexpected catastrophic events have made supply systems susceptible to disruption, halting the flow of commodities and affecting profitability (Simchi-Levi, Wang & Wei 2018). Supply-chain disruptions cost global supply networks more in 2021 than at any other time in history (Harvard Business Review 2021; World Economic Forum 2021). The coronavirus disease 2019 (COVID-19) pandemic provides significant and even novel challenges to supply stability and integrity, implying that effective management techniques or strategic actions for the fast-moving consumer goods (FMCG) business must be reconsidered and reinforced (Ivanov & Das 2020).

South Africa's retail industry is one of the largest on the African continent implying that it is a major contributor to the gross domestic product (GDP) and economy. Yet there remains much scope for further work to mitigate further unexpected supply-chain disruptions (Burgos & Ivanov 2021; Ivanov & Das 2020). Following the COVID-19 pandemic, which caused unprecedented supply-chain disruptions, interest in the study of supply-chain resilience regained momentum (Hobbs 2020; Ivanov 2020; Magagula, Meyer & Niemann 2020). In this regard, Mollenkopf, Ozanne and Stolze (2021) note that the COVID-19 crisis has exposed both the capacity and the fragility of

retail supply chains in meeting consumers' needs. The FMCG retail industry is a key sector in the South African economy (StatsSA 2020). Blos, Da Silva and Wee (2018) observed that the problem of supply-chain disruption appeared as a main concern to many industries. In this context, designing disruption-management strategies for a robust supply chain has become a critical worldwide issue that is still under-explored (Blos et al. 2018). Disruption risks have been recognised as a critical area of research in the supply-chain-management literature (Ivanov 2018; Schmitt et al., 2017).

Many studies on supply-chain resilience investigate supply-chain risk management broadly as an enabler of supply-chain resilience (Agigi, Niemann & Kotze 2016; Ali, Mahfouz & Arisha 2017; Simba et al. 2017). However, as observed by Sawik (2017, 2018), studies on disruption risks and optimisation of recovery processes in supply-chain and logistics systems remain limited. So far, much of the research on disruptive strategies is conceptual, theoretical and normative, and the few empirical investigations available are mostly case-study based (Tukamuhabwa et al. 2015). More recently, some studies have suggested that the adoption of blockchain technology can enhance supply-chain resilience in times of increased risks and uncertainty (Etemadi et al. 2021; Min 2019; Yin & Ran, 2021). According to Swan (2013), the blockchain is a new organising paradigm that may allow for the coordination of all human activity on a much bigger scale than previously imaginable as along with the discovery, value and transfer of all quanta.

Recent and current major supply-chain disruptions, from the 224000-ton vessel stuck in the Suez Canal, to COVID-19, to delays at border posts, have all exposed the vulnerabilities of the FMCG and retailer supply chains in unprecedented ways. As discussed, there remains a paucity of empirical studies in the area of strategies for the minimising of supply-chain disruption. So far, many studies are conceptual and normative. This study intends to build on previous studies by contributing to knowledge of building supply-chain resilience of the FMCG retail industry in the face of supply-chain disruptions. The use of uncertainty framework theory (UFT) as a lens of investigation will bring to the fore uncertainties associated with managing fast-moving inventory, demand management and blockchain technology.

MacCarthy et al. (2016) identified and explored significant elements, concepts and main themes focusing on the development and evolution of supply-chain disruptions. The supply chain landscape is changing as new supply chains emerge and evolve for a variety of reasons (Adobor & McMullen 2018). As the supply landscape is ever evolving, this study will explore strategies that combat disruption and enable supply-chain resilience in the South African FMCG and retail industries. The economy, both in South Africa and globally, and modern life are both dependent on supply chains. A new science of supply-chain evolution is required: one that combines existing operations, supply-chain and procurement theory bases with insights and views from a far

broader range of disciplines (Bier, Lange & Glock 2020; MacCarthy et al. 2016). The aim of this study was to investigate the supply-chain disruptions faced by the South African FMCG retail industry and to explore disruption-mitigation strategies that will enable supply-chain resilience. The nature of FMCG operations in Africa, unlike in developed countries, is far more susceptible to a wide variety of potential disruptions and delays, which causes uncertainty (Ali Syed & Siddiqui 2019; Rodrigues & Potter 2013). Therefore, this study sought to investigate strategies for supply-chain resilience in the FMCG and retail industries in South Africa.

## Literature review

### Theoretical framework

Theoretical foundations aid in deciphering the existing state of affairs and the foundations of specific actions. Several scholars have created a toolkit of theories to help other researchers generate new insights about a phenomenon of interest. For the purposes of this study, the UFT is relevant. The UFT, also known as the Hau Lee matrix for supply-chain strategy, was developed by Stanford professor Hau L. Lee in 2002. Lee (2002) posited that supply chains can be challenged by unpredictability in supply and demand, necessitating the use of diverse techniques when supply is unclear. Natural disasters or epidemics can interrupt supply-chain operations. Owing to the global spread of COVID-19, the supply chain recently faced barriers and substantial challenges that have directly affected its stages (Grida, Mohamed & Zaied 2020). The present study was motivated by the massive impact of this pandemic, which caused and continues to cause disruptions in supply chains in numerous areas following the imposition of preventive regulations, the most prominent of which is the quarantine that the world has witnessed lately (Abdel-Basset & Mohamed 2020).

According to Meotto (2021), supply-chain uncertainty refers to a decision-making process in the supply chain in which the decision-maker does not know exactly what to decide owing to lack of transparency of the supply chain and the impact of possible actions. Supply chain uncertainty refers to a shift in the supply chain's balance and profitability as a result of prospective and unpredictable events, necessitating a response to re-establish the balance (Lee 2002). The UFT framework was chosen because it allows the study to incorporate several of the supply-chain areas influenced by disruptions like COVID-19, such as supply and relationship management and demand management, as listed by Chowdhury et al. (2021) as well as to combine the supply chain management (SCM) perspective with the marketing perspective and the operations-management perspective of Rose, Singh Mann and Rose's (2012) supply chain strategy taxonomy.

### Fast-moving consumer goods and retail industries in South Africa

Fast-moving consumer goods are products that sell quickly at a relatively low cost (Kenton 2021). These goods are also

called consumer packaged goods. Fast-Moving Consumer Goods have a short shelf life because of high consumer demand (e.g. soft drinks and confection) or because they are perishable (e.g. meat, dairy products and baked goods). These goods are purchased frequently, consumed rapidly, priced low and sold in large quantities. They also have a high turnover on the shelf at the store. According to a report by Food and Agriculture Organization of the United Nations (FAO) (2021), this category of low-cost goods, sold quickly, includes a range of consumables including processed and perishable foods, soft drinks, basic toiletries, beer and basic pharmaceuticals. The FMCG industry comprises intermediaries who sell low-cost consumer packaged goods, beer and pharmaceuticals after breaking the bulk from manufacturers.

In contrast, the retail industry is the bridge between production and consumption. Big players in this industry in South Africa include Shoprite, Pick n Pay, SPAR Group, Woolworths, Massmart Holdings, Clicks and Dis-Chem. Also noteworthy are the spaza shops, which serve certain residential areas. As the retail industry acts as a bridge between production and consumption within the value chain, the supply-chain disruptions affecting the industry are being felt widely and almost immediately. According to Neboh and Mbhele (2021), the South African FMCG retail industry is the largest in the sub-Saharan region and the 20th largest in the world. This makes the South African retail industry an essential area of study.

The FMCG retail industry is a profitable industry that employs a large number of workers and contributes significantly to the overall economy (Agigi et al. 2016; Bruwer 2016). The South African FMCG retail industry faces unique performance-related challenges that obstruct its ability to sustain growth in a competitive and volatile sector (Loury-Okoumba 2018). Billions of people buy and use FMCG products from supermarkets, open markets or small shops on a daily basis worldwide (Ogunlela 2018; Okwu & Tartibu 2020). The activities of the FMCG industry are of significant benefit to the South African economy, in that they provide employment and produce goods for local consumption (Jacobs & Mafini 2019; Ogunlela 2018). Following the worldwide outbreak of COVID-19, the FMCG industry is experiencing instability all over the world (Singh et al., 2020). The FMCG retail industry has grown in the past 10 years in both South Africa and the global economy, so that today almost every part of the world has markets where customers can find the products they consider necessary to purchase (Carstea et al. 2017).

### Disruption strategies for supply-chain resilience

According to Adobor and McMullen (2018), resilience is a system's ability to adapt to change and deal with surprise while retaining the system's basic function and structure. Ivanov, Tsipoulanidis and Schönberger (2019) state that supply-chain resilience is the ability to maintain, execute and recover (adapt) planned execution, along with achievement of the planned (or adopted) performance. All three types of

resilience are required for resilient supply chains. Approaches to efficiency and system optimisation may promote rapid recovery after a disruption (Adobor & McMullen 2018). The idea of resilience refers to the ability of physical and human systems to respond to and recover from extreme events, and it has been an issue that has received a lot of attention in catastrophe study in recent years (Falasca et al., 2008; Rose & Liao 2005). Firms have learnt how to strengthen the resilience of their global supply chains to confront disruptions triggered by severe disasters (Ivanov & Das 2020). Businesses have taken steps to strengthen the resilience of their global supply chains to disruptions posed by natural or industrial events.

The literature on supply-chain strategies identifies five key operational strategies to manage supply-chain disruption risk, namely: (1) stockpiling inventory, (2) diversifying supply, (3) backing up supply, (4) managing demand and (5) strengthening the supply chain (Kamalahmadia & Parast 2017; Wang & Yao 2023). Some studies on disruption-minimising strategies for supply-chain resilience have been conducted in the petro-chemical, pharmaceuticals and logistics industries in response to supply-chain disruptions (see Kotzé, Botes & Niemann 2017; Liu & Lee 2018; Pashapour et al. 2019; Yaroson et al. 2021). According to Mollenkopf et al. (2021), disruptions in the supply chain and sudden changes in consumer behaviour suggest the need for renewed attention to underlying processes. There is, however, a need for more research on disruption-minimising techniques for supply-chain resilience in the FMCG retail business (Craighead, Ketchen & Darby 2020; Meotto 2021; Pettit, Croxton & Fiksel 2019; Pournader, Kach & Talluri 2020).

### Ethical considerations

Ethical clearance to conduct this study was received from Ethics Committee at the Department of Business Management, University of Johannesburg with ethical clearance number 22SOM07.

### Research methodology

This study used an exploratory qualitative research approach to analyse disruptive supply-chain resilience tactics in the South African FMCG retail business, allowing for a fuller understanding of the problem. Table 1 shows the number of FMCG and retail industry participants from each player who participated in this study. A total of 25 FMCG supply-chain procurement professionals were selected for the richness of data to reach saturation. Data saturation was reached around the 25th participants. According to Fusch and Ness (2015), data saturation is the point in the research process when no new information is discovered through data analysis, signalling to researchers that data collection should be halted. Table 1 shows the profile of the participants of the study across the FMCG industry.

Participants were chosen using a non-probability purposive sampling technique based on the expertise and experience supply-chain and procurement within the South African

**TABLE 1:** Profile of the research participants.

Participant identifier	Gender	Position	Years of experience	Player or actor or category	Province
P1	Male	Director or owner	34	FMCG retail	Limpopo
P2	Female	National buyer	17	FMCG retail	Western Cape
P3	Male	Senior national buyer	15	FMCG retail	Gauteng
P4	Female	Director or owner	34	FMCG retail	North West
P5	Female	National buyer	8	Retail pharmacy	Western Cape
P6	Male	CEO or owner	45	FMCG retail	Western Cape
P7	Male	Store manager	21	FMCG retail	Gauteng
P8	Male	Buyer	10	FMCG retail	Gauteng
P9	Male	General manager stores	18	FMCG retail	Gauteng
P10	Male	Commercial head SCM	25	FMCG retail	Western Cape
P11	Male	Director or owner	8	FMCG retail	Gauteng
P12	Female	National procurement manager	12	FMCG retail	Western Cape
P13	Male	SC demand analyst	8	FMCG retail	Gauteng
P14	Male	Regional SC operations manager	6	FMCG retail	Western Cape
P15	Male	Store manager	26	FMCG retail hardware	Gauteng
P16	Female	SC coordinator	6	FMCG retail	Gauteng
P17	Male	Senior buyer	12	FMCG retail	KwaZulu-Natal
P18	Male	Store manager	18	FMCG retail	Western Cape
P19	Male	Group executive SCM	20	FMCG retail	Western Cape
P20	Female	Inventory manager	10	FMCG retail	Gauteng
P21	Female	Online category manager	12	Online FMCG retail	Gauteng
P22	Male	Buyer	8	FMCG retail	Gauteng
P23	Male	Buyer	9	FMCG retail	KwaZulu-Natal
P24	Female	Owner	7	Retail spaza shop	Limpopo
P25	Male	Department manager	8	FMCG retail hardware	Gauteng

FMCG, fast-moving consumer goods; SCM, supply chain management; CEO, chief-executive-officer; SC, supply chain.

**TABLE 2:** Themes generated.

Theme	Description
1	Competitive market environment
2	Geopolitics
3	Automated distribution centres
4	Natural disasters
5	Rise of nationalistic sentiments
6	Acute skills shortages

FMCG retail industry. Data were gathered through semi-structured interviews (SSIs) with a specific goal in mind. The SSI is a technique for soliciting subjective responses from people about a situation or event they have encountered (McIntosh & Morse 2015). Semi-structured interviews were preferred in this study because they allow for the probing of respondents' thoughts and opinions in instances where it is beneficial for them to elaborate on their comments (Gupta & Awasthy 2015).

Guba's four criteria to develop trustworthiness in qualitative research, namely credibility, transferability, dependability and confirmability, were all used in this study. Credibility refers to the extent to which the findings of research appear believable or accurate (Sbaffi & Rowley 2017). Credibility was established in this study using the triangulation method. Data for this study were collected using a combination of in-depth SSIs, observation and existing literature to establish triangulation. Transferability in qualitative research allows for the generalisations of findings to more expansive research settings (Lincoln & Guba 1985). Transferability was determined in this study by noting the unique specifics of the research situation and methodologies and comparing them to

a similar situation inside the FMCG retail and industry supply chains that they are more familiar with. Dependability was attained by an audit trail that described the research steps conducted from the beginning of the research effort (Lincoln & Guba 1985). Raw data and field notes were included in the audit trail. Confirmability is based on the idea that the findings can be verified by other scholars. The researcher made sure that the findings were not influenced by any bias or assumptions. The amount to which the researcher confesses their own predispositions, according to Miles and Huberman (1994), is a significant factor for confirmability.

Thematic analysis was employed to analyse the data. Thematic analysis is categorising data from interviews into topics that will guide debate. According to Braun and Clarke (2006), thematic analysis is a technique for qualitative data analysis that is both accessible and conceptually flexible. The qualitative analysis software ATLAS.ti (Version 22) was used in the thematic data analysis. The researcher sought permission and consent to interview supply-chain specialists in the FMCG retail industry during the data-collection phase. The primary ethical considerations were maintained during data collection to ensure that no damage is done to participants, assuring informed consent, avoiding invasion of privacy and avoiding any type of deception (Diener & Crandall 1978; Bryman & Bell 2011).

## Research findings

The study generated the following themes from the generated primary data (Table 2 provides a summary of the generated themes).



## Theme 1: Competitive market environment

This was the first theme that emerged from the primary data collected from the 25 participants. This theme had the highest code frequency and generality during ATLAS.ti analysis. Regarding the retail landscape in South Africa, there is high competition with key players occupying a major market share. The expressions from participants are indicative of this theme.

One of the directors in one of the FMCG retail shops stated:

'The FMCG market, in my opinion, is extremely competitive. Eight large retailers, including Massmart, with brands like Cambridge, Game, Makro, and Shoprite Checkers, SPAR, and Pick n Pay are the leading participants in the market. Additionally, there are many small independent retailers and informal enterprises operating in the same area. You may find the little independent shopkeepers there, such as the spaza shops and your rural grocers, as well as other types of enterprises. These businesses are today controlled by foreigners, primarily Somalis and Pakistanis. However, the majority of these small sellers are unregistered dealers and unauthorised traders.' (P1)

The director and owner of one of the large national chain stores had the following sentiments regarding the competitive nature of this sector:

'There is intense competition in South Africa's FMCG markets for both market-share acquisition and share retention. Building long-term advertising and sales promotion programmes requires a lot of time, effort, resources and money from both small enterprises and major corporations. FMCGs regularly engage in severe price competition with one another in a number of circumstances.' (P11)

A highly skilled supply-chain and demand-forecasting analyst for one of the largest chain stores, who ensures that stock-outs are rare, through effective replenishment, gave his own opinions regarding the level of competitiveness in this market by saying:

'Due to the enormous number of competitors in the sector and the availability of small businesses, there is intense competition in markets that are fragmented. The formal industry is dominated by the big four supermarkets, which has resulted in notable levels of concentration. Overall, market conditions are placing a light amount of pressure on rivals. While pharmacies, wholesalers and businesses that produce face masks, sanitisers, and other sanitising products, like Clicks Group, have been found guilty and fined for unreasonable price increases during the lockdown, the Competition Commission is investigating supermarkets for unfair price increases on specific foodstuffs.' (P13)

These responses clearly express the competitive rivalry of the retail landscape in South Africa. Southern African nations have seen a significant expansion and distribution of supermarket chains during the past 20 years (Das Nair 2018). According to Das Nair (2018), foreign direct investment from larger African economies has historically been a major factor in the expansion of supermarkets throughout Africa. The FMCG retail industry is highly competitive because of few barriers to entry and the fact that businesses

compete with many other local, regional, national and even international retailers.

## Theme 2: Geopolitics

This was the second comprehensive theme that emerged from the primary data, as it was a serious concern about supply-chain disruptions in the FMCG retail industry.

An owner and director of one of the big retail shops, with 34 years' experience, gravely lamented the impact of geopolitics on supply-chain resilience and disruption in South Africa and even on a global scale:

'As a result, when something happens in another country, such as the ongoing conflict in Ukraine, we are immediately drawn to it. Only recently have we learned that Ukraine produces somewhere between 20 and 30% of the world's white wheat. The conflict's consequences were felt throughout all of the world's value chains, which had a significant influence on consumer food and energy. The conflict disrupted other crucial food supplies, including wheat and sunflower oil, and caused a catastrophic global and humanitarian disaster.' (P1)

A buyer with a stake of 8 years' experience in one of the big retail shops had to share the following sentiments:

'In terms of the cost of essentials like cooking oil, food, and fuel, geopolitics that are impacting Ukraine and Russia in their struggle also affects us. Because of globalisation, we are experiencing the aftereffects of the war. Reshoring and nearshoring, in my opinion, can also be highly effective in conjunction with global geopolitics. Our value chains are too intertwined, which is why we first saw the US-China trade war, the Brexit, the crisis in Ukraine between Russia and the West, the potential for a war in Taiwan, and more.' (P8)

A director and owner of a big chain store had the following sentiments about geopolitics in response to disruptions:

'Major international trade routes were impacted by the conflict between Russia and Ukraine when shipments were stopped, which frequently caused food shortages and other FMCG commodities to drive worldwide inflation and recession. Several commodities, including fertilizers, food items, oil and gas, saw a sharp surge in price. There were rises in freight costs, a lack of containers, and a lack of warehousing space at significant ports because of the war.' (P11)

## Theme 3: Automated distribution centres

Another well-experienced owner and director, with 34 years' experience, had this to say about DCs:

'In my opinion (DCs) are the ideal option for retailers or wholesalers to prevent shortages, but they also have an impact on prices and stock levels in the DCs. Because customers use essential products and commodities on a daily basis, the market is expected to expand at a competitive pace that is rising year over year.' (P4)

Another national buyer had the following sentiments about DCs' efficiency in supply chains, as this was clearly seen during COVID-19, when there were rare shortages in the

chain despite serious constraints. The DCs handled all the customer needs:

'In order to improve efficiency, these DCs are also heavily automated. So, the largest threat to our firm is lost sales, which we manage by often consolidating our stock in one DC that we are confident can handle all of our customer needs. The receiving floor is currently a very significant problem. Therefore, with regard to COVID and everything, it was particularly awful while we were operating under Level 5, Level 4, lockdown, since it was quite stringent about the number of people on the floor, in the receiving bays, and in the DCs.' (P5)

An experienced national procurement manager had this to say about how the advent of highly automated DCs bolstered their supply-chain resilience and helped keep the prices stable:

'Even though South Africa has experienced numerous disruptions, including COVID-19, natural disasters, blackouts, strikes, and wars, I must admit that the emergence of highly automated DCs has assisted in keeping prices stable by preventing us from experiencing severe shortages in the FMCG sector.' (P12)

#### Theme 4: Natural disasters

Natural disasters emerged as another theme with high frequency from all the participants and both a high case count and code count. Natural disasters are the negative impact of a natural occurrence, which harms communities and businesses (Gunessee, Subramanian & Ning 2018). Natural disasters disrupt supply chains in unexpected ways, as they range widely in their form, from adverse weather conditions to pandemics. This theme is relevant because most natural disasters reshape supply chains. In light of this, this is what one participant said about natural disasters:

'We saw the ports in Durban getting really vandalised by the bad weather as well. All these things really disrupted the supply-chain network in South Africa, but the good thing is that South Africa has been able to really bounce back and continue with business as usual, after those disruptions.' (P3)

Issues about adverse weather conditions affect supply chain networks in South Africa.

Another participant expressed the following in support of this theme:

'And you might also find out issues of drought, issues of climatic changes that really bring with them disastrous ill effects, floods, drought in other parts of South Africa really because you will find in terms of food, for example that you'll find in our outlets these really depend on the farming community. And the farming community in nature, by its own nature, depend largely on stable weather patterns and when weather patterns begin now to shift to extremes, then that really affects food supply into the retail shops.' (P6)

The effects of interruptions in China are felt globally, as it is regarded as a world factory, sometimes sparking shortages which, in turn, caused prices to spike. Another participant said the following in support of this theme:

'Since China is the major actor in global value chains with major stake in global supplies, when supplies were affected COVID-19 the effects were felt globally as China was a dominant supplier of many FMCG products. This in a way was driving prices up because of shortages in supplies, you know demand and supply correlation.' (P5)

Natural disasters were indeed a huge disruption in South African supply chains. The adverse weather conditions in KZN disrupted the entire supply chain. The disruptive effects of weather on supply chains require mitigation, as they cause chaos and uncertainty. The disruption of the port of Durban as the result of the floods had a ripple effect on key logistics arteries for the continent because this is the biggest container hub in sub-Saharan Africa.

#### Theme 5: Rise of nationalistic sentiment

These violent nationalistic sentiments spark looting and riots, which is not good for business at all. In light of this, a director and owner of one of the large national chain stores stated the following in support of the theme:

'More so, operation vigilantism [Operation Dudula] and the rise of anti-immigration sentiments mostly raised by low-income groups leaves all refugees and immigrants afraid of their lives. Remember the violence which happened recently in Diepsloot, people end up looting which is not good again for business. We were just afraid that our businesses will be vandalised again.' (P11)

In keeping with this theme, an experienced commercial supply-chain head expressed the following about these violent nationalistic movements, as they promote looting to the businesses:

'I also feel the rise of pressure groups like Operation Dudula is disturbing supply-chain operations as it ignites xenophobia. This operation vigilantism is also some kind of lawlessness because it appears as if there is no political will to deal with this matter. That's when criminals take advantage and end up looting our shops. Like now it's high risk to have our shops in townships because of possible looting and riots.' (P10)

A national buyer had the following to say about spaza shops that were looted because they were foreign owned:

'The anti-foreign sentiments which sparks looting in foreign-owned spaza shops is very disruptive as the looters are not discriminatory. It ends up spilling everywhere in the sector as people are hungry and angry. As a matter of fact, this happens every year and nothing serious seems to be done. It's not good for our supply chains as it is very disruptive and give panicking mood to our customers and businesses.' (P15)

#### Theme 6: Acute skills shortage

This is reiterated by multiple participants who lamented the skills shortage in the sector. Many confessed that they rely much on foreign labour. A director and owner of one of the big chain stores lamented the skills shortages in the sector through the following statement:

'The challenges are the shortage of strategists; you'll assert that this is due to a shortage of skilled human resources in South Africa.

I can give an example of how, a few years ago, stockholding and the computer system, along with the type of person I would have dispatched to come and count the quantity, demonstrated that our educational system has not produced workers who can legitimately claim to be employed in the current millennium. You must consider whether the year I have been sitting here has seen a decline in the quality of human resources, which I believe is the main factor in the destruction of the personnel if the majority of them are incapable of carrying out their duties. Today, you have to instruct someone to count the same items three or four times.' (P1)

An experienced senior buyer stated the following about skilled labour shortage:

'For the South African economy, foreigners being blamed for say taking away jobs from South Africans rather than bringing in jobs to South Africa, some of the local people really do not have the skills that can link the industry resilience and you can only get those from some of those people that are coming through with high levels of technological, for example, so that's one area that really remains quite very threatening.' (P3)

A department manager who had served in the sector for 8 years had the following contribution to make about skills shortages:

'The main difficulty right now is finding skilled employees to carry out the work. As an illustration, since we sell hardware parts and accessories, we need to hire people with the necessary skills. For instance, we need someone [artisan] who is capable of managing things like electric tools, paint or even just the distribution of paint. Acquiring a carpenter who knows how to cut wood, whether they are artists or merely craftspeople, or a person skilled in kitchen design. Therefore, one of our main concerns is finding such skilled artisans. Also keep in mind that there are not enough skilled workers in the nation. Although there are more persons who are theoretically educated than practical educated.' (P25)

## A framework for supply chain resilience

In light of the findings presented earlier in the text, Figure 1 shows the preliminary disruption-mitigation strategies for supply chain (SC) resilience during disruption.

Depending on the severity and magnitude of disruption, these preliminary strategies can help the enterprise to recover

from disruption. This can be done after supply-chain vulnerabilities are exposed, which can be noticed during predisruption stages. The enterprise can be proactive by engaging supply-chain planning, combined with end-to-end visibility and knowledge management for process efficiency. During disruption, there is a need for simultaneous proactiveness and reactivity. Because of high uncertainty, there is a need for speed responsiveness. Collaboration is needed, as is buffer management, for undertaking the disruption challenges without severely impacting enterprise operations. The post-disruption stage requires the enterprise to be more reactive by being adaptable, revamping and transforming the supply chain on the road to recovery. Adaptability is key to meeting unknown challenges of the future.

## Conclusion and recommendations

The aim of the study was to explore supply chain disruptions within the FMCG industry in South Africa. The literature on supply chain disruptions and resilience was considered within the FMCG industry context. The UFT was used as a lens to understand the supply chain disruption and mitigation strategies. Primary data were collected and generated six main themes, which are market environment, geopolitics, automated distribution centres, natural disasters, rise of nationalistic sentiments and acute skills shortages.

The FMCG industry should practice more reshoring and nearshoring, as opposed to offshoring. In the event of a global crisis like the Ukraine–Russia conflict, major routes can become entirely disrupted. Reshoring and nearshoring could therefore help alleviate these disruptions, as fuel prices in the region might not be as severely affected. In addition to accelerating time-to-market, improving planning cycles and increasing flexibility in the face of disruption, onshoring can help to create supply chains that are less susceptible to risk. There is a need for the retail sector to strengthen its partnerships with local farmers. It is quite worrisome that South Africa relies on imports for sunflower, wheat and rice, while there is vast land in the country that is underutilised for agriculture. The government should contribute by offering incentives to boost local agriculture production and help build a strong agricultural supply chain. This could go a long way as a cost-effective measure that may even help the government to create jobs. There is a need to allow more

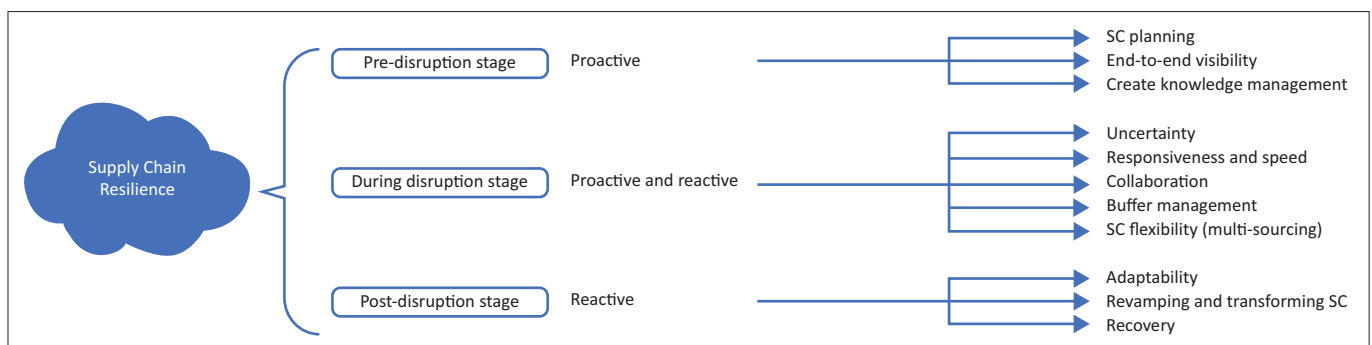


FIGURE 1: Preliminary disruption-mitigation strategies for SC resilience during disruption.

Small to Medium Enterprise (SME)'s to supply the local market and avoid outsourcing. This can be started with small-scale agriculture. SMEs, when carefully supervised and supported, have the potential to constitute the backbone of South Africa's economy.

The findings pointed to many uncertainties in the South African FMCG and retail industry and the study proposed possible resilient strategies to counter these disruptions. The first of the study's suggested practical contributions is a framework for supply chain disruptions in the FMCG industry, as shown in Figure 1. The presence of a framework for disruption-mitigation strategies will go a long way in assisting the various stakeholders in the sector. As it speaks directly to the South African experience, supply-chain managers and those in other settings will thus be able to strengthen their skills, as they will be able to test the framework in their own settings. Besides contributing to the body of knowledge on disruption-mitigation strategies for supply-chain resilience, the study will benefit practitioners, African researchers, policymakers, regulators and disaster-management organisations.

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The authors declare that they have no financial or personal relationship(s) that may have inappropriately influenced them in writing this article.

### Authors' contributions

T.K. conceptualised the article, collected data and wrote the first draft. D.P. supervised the study, reviewed and edited the article.

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### Data availability

The data that support the findings of this study are available on request from the corresponding author, D.P.

### Disclaimer

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