

# Factors Influencing Demand Forecasting and Planning in the South African Apparel Industry: A Case Study

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## ABSTRACT

The apparel industry has become highly competitive and complex as consumers' demands vary, thus pressuring organisations in this sector to invest in better demand forecasting and planning tools. Apparel supply chains are affected by both external and internal factors which impact on the performance of organisations in the market. These dynamics have become challenges in the forecasting and planning of demand in apparel supply chains. This study explores demand forecasting and planning factors influencing the apparel industry. The significance of this study lies in the importance of identifying the factors that influence planning for future demand in order to accurately estimate supply quantities required to meet consumer needs. The study contributes to the existing body of knowledge as it provides insight into the various factors that influence demand planning for a prominent apparel retailer within the South African industry. The study is exploratory and descriptive. Thematic analysis was used to analyse the data. The findings reveal that there are factors that influence how demand forecasting and planning practices are conducted in the apparel industry. These include competition, economic issues, weather, system issues, poor internal collaboration, supplier issues and social media. It is important that organisations in the apparel industry should take these factors into consideration when planning for demand to ensure consumer needs can be met, thus improving the performance of the apparel industry.

**Keywords:** apparel industry; demand planning; South African apparel industry

## INTRODUCTION

Globalisation has intensified competition in the apparel industry and the attendant rapid development of apparel products. The onset of inexpensive communication, the advancement of technology, and the improvement of transportation methods have brought supply chain partners and customers closer to one another, thus increasing the need for more responsive supply chains and leading to challenges in planning and forecasting for demand (Choi & Guo 2018:3409; Choi, Govindan, Li & Li 2017:1). The rapid changes in consumer perceptions of offerings make it difficult to predict the products that consumers will purchase. Furthermore, the outsourcing and offshoring of apparel production complicates preparing and planning for demand since a product item might become obsolete whilst in transit (Nenni, Giustiniano & Pirolo 2013:2). This has resulted in intensified competition within industries (Babai, Ali, Boylan & Syntetos 2013:464) and has negatively impacted on the profitability of organisations (Wen, Choi & Chung 2019:34).

Jacobs & Chase (2018:445) observe that the forecasting and planning of demand within the apparel industry is complex as many processes are involved and communication at various stages is required. The amount of time it takes from the spinning and weaving of materials, the production of the final product, shipping between partners to the final customer, and short product life cycles creates complexity (Wen et al. 2019:35). Therefore, an appreciable length of time can elapse between the idea of producing the garment to its entering the market as a final product. A further challenge is the shelf-life cycle of a fashion product, which is considerably shorter than the amount of time it took to create it (Wen et al. 2019:47). Forecasting for future demand is of significant importance to every business as it influences most functions within an organisation. Thus, the identification of factors that influence the forecasting and planning of demand may help to avoid the loss of sales due to late delivery and/or an accumulation of unwanted inventory due to over-production.

Consequently, organisations need to align their supply and demand plans to ensure the optimisation of profits within their businesses. As observed by Matsoma & Ambe (2016:195), demand forecasting plays an important role when it comes to the profitability of a business. Demand forecasting supports most organisational planning activities such as demand, inventory, production and procurement planning (Jiang, Tian, Xu & Zhang 2016: 800).

Demand forecasting and planning has gained considerable attention in recent times (Matsoma & Ambe 2016:195). Nevertheless, there is a dearth of research in this area. A search on various search engines, most notably Ebscohost, Sabinet and Google Scholar, revealed that several studies on the South African apparel industry have been published dealing with various topics. Some of the studies focused on only one apparel organisation (White, 2017:2; Muhwati & Salisbury 2017:864); on the key factors affecting demand planning practices in the Gauteng clothing industry, specifically clothing manufacturers (Matsoma & Ambe, 2016:194; Matsoma & Ambe, 2017:2); or on a specific factor such as point-of-sale or agility (Muhwati & Salisbury, 2017:864; Raza & Kilbourn, 2017:1). Other scholars chose to investigate specific apparel product types, such as eco-friendly apparel for males, and cotton garments (Taljaard, Sonnenberg & Jacobs, 2018:461; van Niekerk, 2018:2). Given the apparent lack of focused research into the various factors that influence demand forecasting and planning in the South African apparel retail industry the following statement was formulated:

*There is a lack of information and knowledge on factors that influence demand forecasting and planning in the South African apparel retail industry that could negatively affect the efficiency and effectiveness of their supply chain.*

This study is set in the South African apparel industry, with a focus on the factors that influence demand forecasting and planning. This may help to avoid the loss of sales due to late delivery and/or an accumulation of unwanted inventory due to over-production. Apparel Retailer A (a pseudonym) was chosen for the study because: (1) it is one of South Africa's leading apparel retailers; and (2) one of the authors was given permission to conduct a study there and thus had access to relevant data. The following research objective guided the study:

*to identify the factors that influence Apparel Retailer A's demand forecasting and planning.*

Therefore, the various factors that influence demand forecasting and planning of a prominent apparel retailer within the South African apparel industry are explored. The factors identified in the study have an impact on the competitiveness of the apparel sector, which plays a key role in the overall South African economy. The field of demand forecasting and planning is dynamic; thus the study provides new insights into this field and that of SCM. This can assist practitioners in developing appropriate strategies to reduce deleterious effects on the efficiency and effectiveness of their supply chains.

The article first reviews the available literature on the South African apparel sector, the apparel supply chain, factors influencing demand forecasting and planning, and initiatives to alleviate its effects. This is followed by a description of the research design and methodology and a report of the findings. Lastly, recommendations are offered and conclusions drawn.

## LITERATURE REVIEW

### *Overview of the South African Apparel Sector*

The apparel industry has evolved significantly as a result of technological development, intensified competition, the number of fashion seasons and the ever-changing and complex structures of today's supply chains (Ayers & Odegaard 2018:14). The South African apparel industry is one of the leading distribution channels within the country's retail industry and contributes around 8% to the country's GDP (Raza & Kilbourn 2017:2). In addition, it is one of the largest employment sectors in the country and makes a significant contribution to the nation's growth in terms of sales (Matsoma & Ambe, 2016:194). A study conducted by Statistics SA (StatsSA 2015: Internet) showed that in 2014, 21% of the R707 billion contributed by the retailing industry to the economy belonged to the apparel industry, making it the second biggest contributor in the retailing industry.

The growth of global competition has pushed apparel organisations to plan effectively for their production and constantly improve the efficiencies and flexibility of their supply chains (Ivanov, Das & Choi 2018:3361). The South African apparel industry is highly dependent on imported products, with China being the main and largest supplier, making demand planning and forecasting crucial for the local industry (Raza & Kilbourn 2017:5). South Africa's sophisticated and significant changes in technology have improved the country's transportation and communication infrastructure, allowing the apparel industry to source products more cheaply and rapidly from across its borders (Ayers & Odegaard 2018:3). However, responding to the volatile apparel market has proved to be one of the main challenges in South African apparel supply chains. South African apparel organisations see demand forecasting and planning as key investment areas since they have had to develop demand-driven supply chain strategies that are customer focused (Raza & Kilbourn 2017:1).

### *Supply Chain Management*

A supply chain can be described as a network comprising of suppliers, producers, warehouses, distribution centres and retailers that are directly or indirectly interdependent in delivering a product to the ultimate customer (Jacobs & Chase 2018:3; Monczka, Handfield, Giunipero & Patterson 2016:13). The Association for Supply Chain Management (APICS) dictionary (2019) describes SCM as the running, controlling, and monitoring of supply chain activities with the objective of creating and building a competitive infrastructure that leverages global logistics, matching supply with demand and evaluating supply chain performance. The goal of every supply chain is to maximise the overall value generated (Chopra & Meindl 2016:15).

Traditionally, organisations tended to focus on maximising the efficiency of single business units. However, with the rapid changes in technology, organisations are beginning to realise that the aim of SCM is to optimise the performance of an organisation and its partners as a whole and not only one business unit (Xu, Dong & Xia 2015:370). Wen et al. (2019:34) argue that today's organisations cannot become successful market leaders without the help of their supply chain partners. Leveraging the strengths of partners gives competitive advantage and compensates for internal deficiencies.

Interest in SCM has significantly increased as organisations are realising the need for collaborative relationships with the different businesses that affect their productivity (Meier 2016:27). Organisations today are faced with the globalisation of operations, longer lead times, shorter product life cycles, increased competition and the movement towards better customer services (Ivanov et al. 2018:3359). These dynamic developments have made SCM one of the key performance strategies for achieving competitiveness within industries (Choi & Guo 2018:3409).

### *Demand Forecasting*

One of the basic components of SCM is demand forecasting as it directly impacts on organisations' inventory levels, their profitability and their competitiveness within the market (Liu, Ju, Zhao, Gao, Zheng & Jiang 2016:825).

Predicting and planning for future demand has not been easy as much research is required in order for the business to sufficiently prepare for its consumers' demands (Dong, Huang, Sinha & Xu 2014:245).

Demand forecasting can be described as a systematic method that involves the anticipation of demand for products and services to be offered by an organisation in the future under a number of unforeseen and competitive influences (Yu, Choi & Hui 2011:7373). Forecasts that are more accurately predicted may assist with the management of inventories and the maximisation of customer service delivery (Gray & Dougherty 2017:5).

Effective forecasting of demand enables role players within a supply chain to efficiently make long-term and short-term plans as well as sound business decisions. Some of the plans and decisions include planning production policies, procurement of adequate materials, monitoring of sales, management of funds and product pricing decisions (Nenni et al. 2013:3; Rakićević & Vujosevic 2015:4). All these decisions help the organisation to allocate resources efficiently during its operations, allowing it to meet anticipated demand as well as to remain competitive within its market (Liu et al. 2016:827).

Demand forecasting has become a critical element for driving efficient operations in supply chains. Monczka et al. (2016:129) found that forecasting is a critical maintenance tool that ensures that the needs of consumers are met. Efficient communication and collaboration amongst supply chain partners is vital as supply chain management (SCM) decisions are generally made prior to the time that the consumers' actual demands are known. For instance, the procurement of a certain type of garment in a fashion retail supply chain is often undertaken before the organisation has clarity about the consumer perceptions of the product (Kilger & Wagner 2015:125).

### ***Demand Planning***

Effective forecasting methods can only be implemented in supply chains with a clear and concise demand plan in place. In order to do this efficiently, it is imperative that organisations have a clear definition of what the demand planning process is and how to make use of it.

Demand planning is a process that gives organisations the opportunity to reduce costs steadily within the network, improve the management of inventories across the supply chain and improve speed-to-market (Szozda & Werbinska-Wojciechowska 2013:73). Demand planning can be described as a management process that enables an organisation to tailor its resources, capacity, finances and information for production and/or services in ways that allow it to meet the variations in demand within its market (Bóna & Lénárt 2014:98; Zepeda & Valenzaela 2012:1).

Demand planning plays an important role in the running of an organisation and of a supply chain since it produces input data for other key strategic and operative planning areas such as production planning, resource planning and financial budgets (Bóna & Lénárt 2014: 97). Selecting and planning for a new apparel product for the upcoming season is a challenge. Inaccuracy in demand planning results in uncertainty within supply chains, which may negatively impact on the supply chain as a whole. Apparel retailers depend on demand and, in order to remain profitable, organisations have to invest in the constant improvement of demand planning strategies (Choi 2019:163).

### ***Factors influencing Demand Forecasting and Planning in the Apparel Industry***

Clothing is one of the basic human needs for survival. However, the majority of consumers also view clothing as a sign of lifestyle, taste and social status (Chaudhary 2011:2). Fashionable clothing is demanded by the majority of consumers, while basic clothing is sought by the minority (Aksoy, Ozturk & Sucky 2012:222; Thomassey 2010:471). Such inconsistencies in consumer demands make demand forecasting and planning a complex process for apparel supply chains, as demand is influenced by trends, runways and socialites (Matsoma & Ambe 2016:195). The apparel industry is one industry that has realised the importance of demand forecasting and planning due to its high demand uncertainty, lack of historical data and short seasonal trends that lead to short product life cycles (Nenni et al. 2013:1).

One of the aims of the apparel industry is to provide an appealing and desirable connection between a consumer

and the product that satisfies the consumers' needs and wants, resulting in recurring sales (Gharde 2016:1). The accurate prediction of demand has become such a vital issue in SCM that organisations are investing in better forecasting systems to improve their supply chain structures for better performance (Chan & Chan 2010:1195).

Demand has become customer driven, making it vital for organisations to observe the way in which consumers adjust to trends as well as to changes in demand patterns, lifestyles and preferences (Gharde 2016:1). Forecasting and planning for demand remains a challenge (Liu, Ren, Choi, Hui & Ng 2013:1). In addition to having to deal with competitors and the rapid change of the business environment, the apparel industry is faced with a number of factors that influence its operations within its supply chains. The factors that influence demand forecasting and planning within the industry, include technology, globalisation, political unrest, socio-economic issues, environmental responsibility and environmental unpredictability (Matsoma & Ambe 2016:195).

### ***Initiatives to alleviate Factors Influencing Demand Forecasting and Planning***

The following are some of the initiatives used within the apparel industry to alleviate the factors that influence demand forecasting and planning.

#### ***Technology***

Apparel supply chains aim to acquire fabrics, to manufacture and then start shipping within short lead times. With technology allowing consumers to access products easily (due to ease of communication and transportation), apparel retailers are experiencing demand fluctuations as consumers are easily influenced by the comments they find online (Jacobs & Chase 2018:406; Nagurney & Yu 2012:532). It is important for apparel retailers to adjust their supply chain strategies in ways that could help them react to market demands more easily or to maximise profits. Retailers should make use of social media influences as a strategy to maximise their profits by re-structuring their operational strategies accordingly (Shen, Qian & Choi 2017:97).

#### ***Globalisation***

Globalisation contributes to the factors that influence demand forecasting and planning in the apparel retail industry. (Janggaa, Ali, Ismail & Sahari 2015: 262; Matsoma & Ambe, 2016:194). The reduction in the number of apparel manufacturers and the influx of imports have contributed to complexities in forecasting and planning globally, as well as in South Africa (Matsoma & Ambe, 2016:194). The freedom to move people, products and services globally, as well as the ability to outsource the production of products in other parts in the world for a fraction of the price, has led to a significant increase in competition within industries (Babai et al., 2013:464).

Collaborative planning, forecasting and replenishment (CPFR) can be used to provide crucial information across the supply chain network to improve the response to market demands (Heizer, Render & Munson 2017:110). Improving the agility of the supply chain powers it to advantages in product innovation, faster speed to market and greater profits as flexibility has become an important strategy to achieve competitive advantage (Janggaa et al., 2015: 262).

#### ***Political and Legal Matters***

Organisations have to deal with local and global regulations before penetrating into certain new markets and should examine sustainability laws (Choi 2010:110; Gereffi & Lee 2012:24). An organisation's failure to follow the laws may result in government's detaining and delaying the movement of products, thus delaying delivery-to-market. Moreover, failure to abide by the laws may result in the tarnishing of the parent organisation's reputation, payment of fines/penalties, or even a loss of market share (Anner 2018:77). An example is the case of Zara and its association with sweatshops and child labour issues in Brazil, Turkey and Argentina in 2011, 2013 and 2017 respectively (Butler 2016:1).



Society has been pushing governments to curb supply chain irresponsibility by calling for organisations to devise cleaner production methods and safer labour practices (Du, Hu & Wang 2017: 570). This has forced parent organisations to ensure that they take care to select supply chain partners that are sustainable and conform to policies, both locally and internationally.

### *Socio-Economic Issues*

Globalisation has removed international boundaries and introduced new elements that organisations now need to consider before penetrating a new market. These elements include cultural differences, currency exchanges, climate changes, and political and legal systems (Ayers & Odegaard 2018:52). Changes in the economy are often unexpected; for instance, an increase in fuel prices, currency fluctuations, and changes in interest rates and inflation, are all potential issues that could lead to an increase in the prices of products, and the unexpected shifting in demand (Xiao & Jin 2011:257-8). These changes add to the complexity of demand forecasting and planning.

Ayers and Odegaard (2018:52) identified a conventional tool known as a country portfolio analysis, which can be used to assess foreign markets and to weigh market opportunities. Ayers (2006:105) lists four dimensions – cultural, administrative, geographic and economic – as determinants that organisations may use when anticipating a move into a new market. The use of these tools allows organisations to gain a better insight into the type of society they will be investing in.

### *Environmental Responsibility*

Supply chains need to become environmentally responsible. Society has been pushing governments to curb supply chain irresponsibility by calling for organisations to devise cleaner production methods and safer labour practices (Du et al. 2017: 570). This has forced organisations to ensure that they select supply chain partners that are sustainable and conform to these policies, locally and internationally. Furthermore, organisations have found that “being green“ does not only mean acquiring environmentally friendly technologies or using materials that are recyclable, but it also delivers the benefits of waste reduction during production and lowered resource usage, thus cutting down on costs within the supply chain (Jacobs & Chase 2018:411).

### *Environmental Unpredictability*

The success of SCM is dependent on the integration of strategies by supply chain partners in order to be more responsive and flexible to changes in the environment (Sukati, Hamid, Baharun & Yusoff 2012:225). The apparel industry is a highly dynamic environment with rapid and unexpected changes. Supply chain networks are faced with uncertain changes within the external environment that may result in the ability of organisations to estimate successfully the impact of these changes on the supply chain's performance (Janggaa et al. 2015:263). Flexibility and responsiveness have become management strategies of significant importance that allow supply chains to be more agile in a highly unpredictable environment. Heizer et al, (2017:110) suggest that, in order to reduce the impact of unexpected changes within the environment, organisations invest in advanced technology that promotes rapid communication and the sharing of accurate data across the supply chain.

From the review of the literature, it can be concluded that the identification of factors that influence the forecasting and planning of demand and the initiatives to minimise these factors, may help to avoid the negative affect on the efficiency and effectiveness of apparel retailers' supply chain.

## **RESEARCH DESIGN**

An exploratory and descriptive method was adopted. The purpose of the empirical research was to identify the factors that influence Apparel Retailer A's demand forecasting and planning. A focus group question guide was designed to achieve this. The question guide contained five main engagement questions that focused on introducing

the topics in the study's research objective. The other questions were exploration questions (to gain insight into the knowledge that the participants had pertaining to the topic in question) and exit questions (to allow the authors to round up the discussion and move on to the next topic). The discussion guide was checked for content validity by a number of academics during the ethical clearance process. The purpose of this review was to refine the questions in order to confirm that the participants would be able to answer them without any difficulty as well as allowing for assessment of the validity of the questions in order to give greater reliability to the data collected (Saunders, Lewis & Thornhill 2016:723). The discussions were moderated, led, guided and monitored by one of the authors.

### ***Sampling***

The unit of analysis for the study was Apparel Retailer A. The planning department at Apparel Retailer A was selected as the target population of the study. The organisation's planning department works closely with the marketing, human resources, operations and production departments as well as with finance and accounting. The planning department synchronises the plans for anticipated demand provided by each department and then uses this information to draw the final plan for each brand. Apparel Retailer A's planning department was deemed to be the most appropriate target population for this study as it is the only department that has access and makes input to demand forecasting information in most of the organisation's main functions. The planning department comprises 30 employees.

Since Apparel Retailer A allowed only fifteen staff to participate in the study, a non-probability convenience sampling technique was used. Therefore fifteen participants formed part of the focus group discussions. These comprised five brand merchants and ten merchant planners. The participants were selected as they are responsible for the day-to-day planning, forecasting and allocation of the organisation's products and were able to provide the required data. The participants were broken down into three focus groups of five, six and four participants each.

### ***Data collection***

Data collection took place during June/July 2019. The focus group discussions were conducted face-to-face by one of the authors. Focus groups can be described as a type of qualitative research method used by researchers to explore a specific population's understanding and knowledge regarding a particular topic. Focus groups can be conducted through face-to-face meetings, telephonically or via video calling (Koskan, Rice, Gwede, Meade, Sehovic & Quinn 2014:2). This data collection process was deemed appropriate because it allowed the authors to gather participants with similar working experience to discuss a shared topic of interest.

### ***Data analysis***

Data in the study was analysed using content analysis. Content analysis is a method that can be used to analyse qualitative data. It involves identifying themes and key words in the recording of the interviews (Saunders et al. 2016). It is used to "see the meaning" in data obtained from verbal dialogue, visual depictions, and written documents (Braun, Clarke, Hayfield & Terry 2018:1). The data gathered from each participant was transcribed and was then reviewed to identify key words, concepts, sentences, and related themes.

### ***Validity and Trustworthiness***

To ensure that the data was reliable, trustworthy and credible, the researcher used Guba's 1979 model of trustworthiness (Lincoln & Guba 1985: 289). Accordingly, the trustworthiness of this study is based on credibility, dependability, transferability and conformability of the data. Credibility was improved by the use of the author's personal notes and were matched against the transcribed interviews. The questions in the question guide were phrased in simple language to make sure that there was no ambiguity. The participants were given the opportunity to

ask questions and seek clarity, if needed, before responding to the questions. Therefore, consistency was maintained during the focus group discussions, which contributed to the trustworthiness of the results of the study. In order to ensure conformity of the data, the focus group discussions were voice recorded and transcribed verbatim. One of the authors carried out the transcription process and the transcribed data was reviewed and checked for accuracy by both authors.

## RESULTS AND DISCUSSION OF THE FINDINGS

### *Profile of the Participants*

The participants who participated in this study are responsible for managing the forecasting and planning for future demand in Apparel Retailer A's apparel division. Of the fifteen participants, eleven were females. Overall, eight of the participants had been in the organisation between 5 and 17 years and the other seven participants at least 3 years. Five of the participants were brand merchants (team leaders) whilst the others were merchandise planners, meaning the participants had in depth knowledge of the forecasting and planning of apparel merchandise in the organisation. Three focus groups interviews were conducted at which at least one team leader was included in each group. The profiles of the participants in the focus groups and the interview duration are presented in Table 1.

### *Findings and Discussions*

This section provides insight into the factors that influence demand forecasting and demand planning in the supply chain. As indicated in the literature, the forecasting and planning of demand has become challenging due to unpredictable factors that lessen the efficiencies of the forecasting and planning strategies in supply chains (Gharde 2016:1). Table 2 summarises factors established from content analysis of the focus group discussions. The responses given by the participants highlighted competitors, economic issues, current trade, weather, and the environment as the main factors that influence demand forecasting and planning. These factors are discussed in more detail in the sections that follow.

**TABLE 1:  
PROFILE OF THE FOCUS GROUP DISCUSSION PARTICIPANTS**

Focus Group	Participants (N=15)	Position	Gender	Department	Years of Service	Discussion Duration
<b>Focus Group 1</b>	Participant 1	Planner	Female	Ladies Brand A	4	1 Hr 23 Secs
	Participant 2	Planner	Female	Ladies Brand B	3	
	Participant 3	Planner	Female	Ladies Brand C	4	
	Participant 4	Brand Merchant	Male	Team leader – Ladies and Kids Brands	7.5	
	Participant 5	Planner	Female	Kids Brand C and Men's Brands	5	
<b>Focus Group 2</b>	Participant 6	Planner	Male	Men's Brand A and Kids Brand B	3	1 Hr 3Mins 53 Secs
	Participant 7	Planner	Male	Kids Brand A	4	
	Participant 8	Planner	Female	Ladies Brand E and Kids Brand C	14	
	Participant 9	Planner	Female	Ladies Brand D	3	
	Participant 10	Brand Merchant	Female	Team leader – Men, Ladies and Kids Brands	13	
	Participant 11	Brand Merchant	Male	Team Leader – Ladies Brands	11	
<b>Focus Group 3</b>	Participant 12	Planner	Female	Big Boys	8	58 Mins 20 Secs
	Participant 13	Brand Merchant	Female	Team leader – Men's Brands	17	
	Participant 14	Planner	Female	Ladies and Men's Accessories Brands	3	
	Participant 15	Brand Merchant	Female	Team leader – Kids Brands	7	



**TABLE 2:**  
**FACTORS INFLUENCING DEMAND FORECASTING AND DEMAND PLANNING IN THE SUPPLY CHAIN**

Factors influencing demand forecasting and demand planning.	Participants (N15)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Competitors	✓	✓	✓	✓	✓							✓		✓	✓
Economic issues		✓		✓						✓	✓	✓			✓
Current trade					✓		✓					✓	✓		✓
Weather and the environment			✓				✓		✓				✓		
System issues				✓	✓							✓			
Poor internal collaboration									✓			✓			✓
Social media						✓			✓						
Suppliers												✓			✓

Source: Compiled by researcher.

## Competitors

Eight out of the fifteen participants stressed the fact that competitors are the main factor that influences demand as Apparel Retailer A is forced to re-work its business model to remain competitive. One participant described the entry of competitors as having resulted in “middle child syndrome” for Apparel Retailer A:

“We’ve got middle child syndrome because your older brother and sister came on board who are your Top Shop, H&M but on top of that and you’ve got a younger brother and sister which would be the factory stores that are coming on board with one hundred stores across South Africa. They are doing what we did to Edgars, that’s a real struggle for us. We are in a sandwich, there is big brother and sister watching over us and saying, ‘hey, don’t copy us’. On top of that, we’ve got guys coming in for next to nothing underneath us that are not sustainable. They’re not doing what it needs to be done from the building of future business point of view. But they are stealing market share, the Chinese shops” (Participant 11).

This then contributes to the increase of competition in the market as the cancelled product is sold to competitors at a fraction of the price, stimulating the growth of competitors in the industry:

*“There are a whole handful of retailers who are just popping up, Fashion World, Fashion Fusion, The Hub and JET who are coming at us at a price and that’s kind of our game. That’s where we’ve taken on Edgars and Woolies in the past and they have played our game against us and that’s kind of whiplashed back into our supply chain” (Participant 4).*

*“Where they get cost-pricing is that they buy stock from us. So let’s say we cancel something they can buy that for way cheaper. And then they sell that” (Participant 1).*

This is in line with the observation made by Raza & Kilbourn (2017:1) that the growth of global competition and the need to respond to the volatile apparel market is a key challenge in the South African apparel supply chain.

## Economic Issues

Six of the participants noted that economic issues influence demand. Unexpected changes in the economy have led to a number of challenges for the organisation such as inflation, fuel price increments, an increase in tax or interest rates and currency fluctuations. These issues affect the decisions that the participants make regarding the forecasting and planning of future demand in two ways. Firstly, inflation, fuel price increments and interest hikes reduce the disposable income of customers which results in reduced sales. Secondly, the depreciation of the South African rand

makes it costly to acquire goods from suppliers overseas which results in the product being more expensive.

The participants identified issues with exchange rates, load-shedding and changes in consumers' purchasing behaviour as issues that negatively impact on Apparel Retailer A's supply chain:

*"For me, the exchange rate is the biggest. It is the heart and soul of what we do at the end of the day because if the Dollar runs, we didn't make margin and things get tough. Dollar comes back in our favour, we smile and we make money. It affects our customer as well as not just us... Load shedding is a big thing. So now instead of buying clothing with their money now they think about candles, torches, a generator and takeaways instead of cooking food at home" (Participant 4).*

*"We used to have that kick on pay day, but now we only getting the kick after payday because customers are holding their money and they say, 'I'm going to pay bills, petrol and then I will see how much I have left, but right now I'm not going to go shopping.' We are seeing the shifts in shopping patterns and there's big dips and lows in the month as well. Whereas back in the day we never used to have those lows on our sales, we could still get those growths mid-month but we are not getting those anymore" (Participant 10).*

The findings concur with the literature. Xiao & Jin (2011:257) indicate that changes in the economy are not always expected and could lead to an increase in the price of products, thus shifting demand unexpectedly.

### **Current Trade**

Five of the participants noted that current trade is a factor that influences demand. Consumers' reactions to trends, which the participants referred to as "current trade", do not only bring profit into the business but also serve as a challenge with regard to demand planning:

*"The biggest thing for us currently is like we keep saying current trade, that's the biggest internal factor, that's currently happening in the business. So we constantly, always reacting to now" (Participant 5).*

*"Current trade is what embeds everything in the critical path ...a jacket (for example) is flying and you called 50,000 units that come in on a Monday and the customer is like, no thank you. And now we are called to go back to the drawing board" (Participant 7).*

*"You are reacting all the time... So it's difficult" (Participant 13).*

An explanation was provided as to how the plans in place for demand are based on assumptions and the complexities that come with this:

*"The difficulty in demand planning comes from all these unpredictable elements, it's based on huge assumptions. And as time goes on and as you factor in your plan's latest reality, the assumptions probability end up being less and less, as it gets closer to being a fact rather than being assumption. That's if you are factoring in your latest information. The only thing we can do is taking into account where we're going vs the plan. You then find ways of managing the variances in your plan" (Participant 15).*

These findings concur with the findings of Janggaa et al. (2015:263), who state that the apparel industry is a highly dynamic environment with rapid and unexpected changes. As a result, supply chain partners need to be more responsive and flexible to changes in the environment (Sukati et al. 2012:225).

### **Weather and the Environment**

Four of the participants identified weather and the environment as a factor that influences demand. Global warming has led to instability with regard to seasons and this has had a negative impact on the fashion industry. A delay in seasonal change cannot be anticipated and forecasting plans for the next season would have already been made by the organisation months in advance:

*"Weather. Like now, winter is three weeks late this year versus last year. We've got winter stock coming out of our ears. So now we are reacting to winter stock where we are overstocked" (Participant 13).*

*“With global warming, winter is kicking in late. Where your winter product that you’ve imported isn’t selling as quickly as we expected because it’s 45 degrees outside and no one wants a polar fleece item” (Participant 9).*

In other instances, the season stocks may arrive on time, but deliveries are delayed because the ships cannot dock:

*“Weather as in when it’s windy and it’s raining and the ships can’t dock, would have an effect on our orders, with our orders not being delivered on time” (Participant 9).*

The push to be more environmentally friendly is one that contributes to instability when planning for demand:

*“Oh, environmental issues, being green, sustainable. The sustainability vibe that’s going on at the moment also affects demand, suppliers are all of a sudden supposed to be environmentally friendly. The fashion industry is quite connected a lot to pollution, from the factories and clothing wastage and all of that” (Participant 7).*

As noted by Du et al. (2017:570), supply chains need to become environmentally responsible, devising cleaner production methods and safer labour practices.

## **System Issues**

Three of the participants identified system issues as a factor that influences demand. The advancement of IT has permitted supply chains to work efficiently and most organisations look at IT as a competitive tool. Nevertheless, it sometimes involves limitations, complexities and challenges:

*“The systems from the DC and our IT systems are not where they need to be. And like sometimes they don’t read each other correctly. We had this system called “System B,” and it never took off and it never worked for months. And the, IT department was insisting that the system was sound and the DC was so confused with what it was doing. So we literally had like 30 to 40% of our stock stuck in the DC at any given time and you couldn’t get it out” (Participant 12).*

The rectification of these system issues within the organisation is also quite complex and at times frustrating for demand planners:

*“In terms of systems issues, we have the service desk where we can log a call if you encounter an issue. They will rank it whether it’s important or not. The arrangement can be frustrating. If you can’t do something on the system then you have to go do something else until it’s working again. And you wait until IT is ready to assist” (Participant 5).*

The findings are in line with the literature which indicates that technology helps forecasters improve their forecasts (Belvedere & Goodwin 2017:652). The successful implementation of IT systems results in benefits that make it easier to keep up with the level of competition faced by organisations in this technology dominated era (Wen et al. 2019: 34).

## **Poor Internal Collaboration**

Three of the participants noted that the level of collaboration within the organisation itself contributes to the list of the factors influencing the planning of demand. The findings revealed how uninformed changes, miscommunication and neglect affect the plans that may have been put together for future demand. This compromises the seamlessness of the supply chain:

*“We consolidate our own containers and we’d bring it in ourselves. We can see on the system, stock arrives this week...Only to learn that it hasn’t been processed through the DC. Especially in kids-wear. We are not prioritised; they would rather prioritise ladies wear first and then men’s-wear and then we are last” (Participant 12).*

Consistent communication is one of the keys to maintaining a continuous supply chain, but can be a struggle in large organisations:

*“We had this system...and it never took off ...It took months eventually for people to sit and agree that ‘Oh, it’s*

*not working', leave it out and now to allocate jewellery, you do it through "system A" that you shouldn't be doing because it's actually a fashion item. So there are some finer tweaks we really need to be doing" (Participant 12).*

Additionally, after assessing a product and finding that it is not performing as well as expected, the organisation may choose to discontinue the product and cut off the orders with suppliers:

*"In basic terms, if that item has been in our stores before that exact item, they can only resell after 6 months. But if it hasn't been in our store and we have cancelled the order they can sell it straight away. But then obviously they have to take off all [Apparel Retailer A's] labels and all that stuff" (Participant 2).*

The findings are in line with those made by Wen et al. (2019:34), who argue that today's organisations cannot become successful market leaders without the help of their supply chain partners together with their internal operations.

## **Social Media**

Two of the participants identified social media as a factor that influences demand. Technological advancement came with a number of advantages with regard to ease of communication, transportation and manufacturing, but it also gave consumers the upper hand with respect to product knowledge and perception. Social media platforms and celebrities have become the regulators of consumers' decisions concerning fashion buying:

*"Instagram... Kim Kardashian at the moment is having a massive say on, what young girls and young teens are wearing out there. Like if she makes a post on something, the next thing the girls are all wearing that. And its influence is done in one day, it's a day thing and ten and a half million people around the world are seeing that one post and it immediately causes a mind shift. And the next thing customers change their minds" (Participant 6).*

This is in line with the findings by Shen et al. (2017:97), who suggest that retailers should make use of social media influences as a strategy to maximise their profits by re-structuring their operational strategies accordingly.

## **Suppliers**

Two participants noted that choosing to outsource production and manufacturing to international suppliers comes with cost saving advantages but, in some instances, loss of sales due to delays from suppliers. Lead times not only get longer but the ability to satisfy demand on time also becomes complex:

*"We had a pair of shorts that was supposed to arrive in September, but arrived in February" (Participant 15).*

*"If suppliers are going to make more money from say Ackerman's, forget your orders" (Participant 12).*

This finding is in line with the findings by Meier (2016:27), who posits that organisations are realising the need of having collaborative relationships with the various businesses that affect their productivity.

## **SUMMARY OF THE FINDINGS AND RECOMMENDATIONS**

The findings revealed that the factors that influence demand forecasting and planning practices in the apparel industry, include the following:

Competition – as new entrants into the apparel retail industry increase, this decreases Apparel Retailer A's market share and profits. It is suggested that apparel retailers tackle this issue with government in order to protect local apparel retailers from too many international entrants.

Economic issues – unexpected changes in the economy have led to a number of challenges, such as inflation, fuel price increases, interest rates hikes and currency fluctuations. These factors are twofold as they reduce the disposable income circulating in the economy and influence consumers to spend less than expected; and products are more expensive because of a depreciating currency.

Current Trade & Social Media – unexpected changes in the current trade and social media platform disturb the forecasts and plans for demand that the organisation would have anticipated. Globally, Zara is benchmarked as

one of the best apparel retailers. One of their successes is attributed to assigning production to local manufacturers that are in close proximity; thus allowing them to react to market demand timeously (Nucamendi-Guillén, Moreno & Mendoza, 2018: 726). It is suggested that that Apparel Retailer A investigate the possibility and viability of assigning production to local manufacturers that are in close proximity; thus allowing them to react to market demand timeously. This decision could be based on various supply chain factors such as delays in receiving certain product groups that could be manufactured within South Africa. In addition, as suggested by Shen et al. (2017:97) retailers could make use of social media influences as a strategy to re-structure operational strategies.

Weather and the Environment – society and governments demand that organisations become more environmentally responsible; hence the imposition of carbon tax by governments. Global warming has brought about changes in seasons and triggered some natural disasters, thus impacting on Apparel Retailer A's lead-times and consumers' buying behaviours. As noted by Sukati et al. (2012:225) and Janggaa et al. (2015:263) the apparel industry is a dynamic industry and in order to be successful, apparel retailers need to be more responsive and flexible to changes in the environment. It is suggested that due to the instability in seasons, Apparel Retailer A re-engineers seasonal clothing and customises them for a different season to ensure that they sell. For example, a long-sleeved top can be transformed into a short-sleeved or sleeveless top, or a dress transformed into a skirt.

System Issues – glitches in the organisation's technology systems affect the rate at which participants respond to changes in the environment. The systems that Apparel Retailer A uses also have limitations as the participants struggle to access certain information that could help them make better decisions. In line with the literature (Chan & Chan 2010:1195), it is suggested that the use of current systems be improved and new demand forecasting and demand planning systems and techniques are introduced, that will allow the supply chain to operate at its best and to be more responsive to market demands.

Poor Internal Collaboration – since internal systems are not in-sync, much time is spent in meetings before any final decisions are made. This results in long lead times as decisions are only communicated to suppliers much later. It is suggested that Apparel Retailer A invests in an "umbrella" system that all functions have access to, to allow for timely reactions and communication. Further, collaboration within the supply chain should be improved as this may help in avoiding delays and long lead-times in the network.

Suppliers – the lack of strategic supplier relationships result in lost sales as production is delayed by suppliers. It is suggested that fair and strategic relationships with key suppliers are developed to ensure their orders take priority; strategic partnering is key (Wen et al. 2019:34).

It is clear from the discussion above that factors influencing demand forecasting and planning threaten to increase costs from over-stocking and loss of sales from under-stocking, reducing profits. Consequently, they have a negative impact on the efficiency and effectiveness of Apparel Retailer A's supply chain. These findings are in line with the observations of Matsoma & Ambe (2016:195) and Jiang et al. (2016:800), that demand forecasting and planning is key when it comes to the profitability and sustainability of a business. Accurate manufacturing and replenishment decisions help to alleviate the mismatching of demand and supply in organisations (Matsoma & Ambe 2016:194).

The objectives of this study were to identify the factors that negatively influence demand forecasting and planning within the South African apparel industry, using Apparel Retailer A as a case. A summary of the factors is outlined in Table 3 combined with the managerial implications and possible recommendations on how these factors could be minimised.

## CONCLUSION

The qualitative case study of Apparel Retailer A provided data collected through focus groups discussions with the planning department. The findings revealed that the factors influencing demand forecasting and demand centred around competitors, economic issues, current trade and social media, weather and the environment, system issues, poor internal collaboration, and supplier issues. Organisations in the apparel industry need to take these factors



**TABLE 3:  
SUMMARY OF FACTORS AND INITIATIVES**

Factors Influencing Demand	Managerial Implications	Recommendations
Competitors	An increase of new entrants decreased Apparel Retailer A's market share and profits.	Government protection of local apparel retailers.
Economic Issues	Fluctuating exchange rates. Inflation, fuel price increases and interest rates hikes resulted in a decrease in of disposable income.	Forward buying to fix import prices.
Current Trade & Social Media	Unexpected changes in the current trade impacts on demand forecasts and planning	Investigate the possibility/viability of the product ranges that could be manufactured locally.
Weather and the Environment	Organisations need to become more environmentally responsible – hence the imposition of carbon tax by governments. Global warming caused changes in seasons which impacted consumers' buying behaviours.	Customises products for a different season to ensure that they sell.
System Issues	Glitches and limitations in the organisation's technology systems affect the rate at which participants respond to changes in the environment.	Improve the use of current systems and introduce new demand forecasting and demand planning systems and techniques.
Poor Internal Collaboration	With internal systems not being in-sync result in longer lead times.	Invest in an "umbrella" system that all functions have access to, to allow for timely reactions and communication.
Suppliers	The lack of strategic relationships with suppliers result in lost sales as production is delayed by suppliers.	Develop strategic relationships with key suppliers to ensure Apparel Retailer A's orders take priority.

*Source:* Compiled by the authors

into consideration when planning for their demand to ensure that consumer needs are fully met, thus improving the performance of the apparel industry.

Based on the study, it is recommended that Apparel Retailer A invest in better collaboration systems with its supply chain partners in order to be more responsive to the unexpected changes in demand. In addition, the retailer needs to build strategic relationships with the organisation's supply chain partners, thus allowing the organisation to improve future forecasting and planning.

The main limitations of the study are the following:

- Data was collected under normal business conditions before the onset of the COVID-19 pandemic, which undoubtedly will have an impact on the efficiency and effectiveness of all supply chains. The exact nature of this impact is difficult to predict or estimate at this stage. However, if anything, the need for improved demand planning processes is strengthened.
- As this was an exploratory study, the study was limited to one single South African apparel retailer and focused on only one department in the entire organisation. Therefore, although the study identified the factors that influence the forecasting and planning of demand Apparel Retailer A's supply chain, the responses cannot be extended to all the apparel retailers in South Africa.
- While a number of factors were identified by the fifteen participants in one department within the organisation, the views from the other departments that also influence the forecasting and planning of demand in the organisation were not obtained.

While this study identified various factors that influence demand forecasting and planning, a future study could be extended to include other apparel retailers to determine whether the factors impacting on demand forecasting and demand planning vary between apparel organisations

There is a dearth of research in this area. This study provides insight into the various factors that influence demand forecasting and planning at an apparel retailer in KwaZulu-Natal. Therefore, this research contributes to the current body of knowledge by addressing a gap in literature on demand forecasting and planning, by providing insight into the various factors that influence demand forecasting and planning for apparel retailers in the apparel industry in a developing country.

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