UNIVERSITY OF KWAZULU-NATAL

SUPPLY CHAIN DISTRIBUTION SYSTEM TOWARDS AFRICAN MARKETPLACE: A CASE OF MR PRICE

by

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DECLARATION

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ABSTRACT

The expansion into new markets gives companies new challenges and unprecedented dynamics, which contribute significantly to the growth of the company. Companies seek to ensure that there are sufficient products available for distribution and that these are positioned correctly at the right time and right place. Companies must have the necessary supply chain technology for order fulfilment. The growth in the number of distribution centres towards creating a sustainable distribution system for the African marketplace is a means towards realising this fulfilment. The level of service and customer satisfaction cannot be completed at the store level without considering the full supply chain process, the product and its raw material, product manufacturing, logistical process, storage and product availability in the store. The non-availability of a product in a store when it is demanded by customers creates problems that dissatisfy the customers since their needs are not met. The main aim of this study, therefore, was to examine the influence of centralised, decentralised or hybrid processes in relation to service delivery, human capacity as well as supply chain technology. The objective of this study was firstly to establish whether a centralised or decentralised supply chain distribution system supports the expansion to the African marketplace. Secondly, to examine the extent of sustainable retail distribution systems towards improving product availability across the African region. Thirdly, to assess the challenges of inventory positioning on the existing outbound and inbound product flow systems across the African continent. Finally, to examine the influence of the supply chain distribution technology on the availability of real time information and visibility of inventory. A descriptive research design was used in this study. Statistical techniques such as descriptive statistics, multiple regression, factor analysis and one-way ANOVA technique were used to analyze the data collected from 100 staff of Mr Price Group. The main findings disclose that the most critical attributes of a good distribution centre are advanced supply chain systems, strong management team and strong workforce. Customer satisfaction as a driving force considers investment in human capital and technology as a vital component to the sustainability of Mr Price Group. There is a need to focus on training and development of employees which can improve productivity and efficiency of any organisation. The managerial implication comprises of some recommendations that will support management in decision making.

Keywords: *Centralisation, decentralisation, information sharing, inventory, service quality, warehouse.*

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ABBREVIATIONS

ANOVA	Analysis of Variance
CBD	Central Business District
DC	Distribution Centre
EDI	Electronic Data Interchange
EPOS	Electronic Point of Sale
FMCG	Fast Moving Consumer Goods
IT	Information Technology
KMO	Kaiser-Meyer-Olkin
OSA	On-Shelf Availability
PANDA	Production and Distributed Analysis system
RFID	Radio Frequency Identification
SPSS	Statistics Package for Social Sciences
UKZN	University of KwaZulu-Natal

CHAPTER ONE
INTRODUCTION

1.1   Introduction

This chapter presents the topic of the study, sets out the background of the study, research problem, and the research questions. It also outlines the theoretical framework for this study. A brief description of the research methodology (the study site, sample size, data collection method, target population, and data analysis) are also set out in this chapter. The issues on the ethical considerations are also considered and concludes the chapter with a discussion of the study's limitations. In the retail sector, companies such as Mr Price Group, have found it important to enter new markets. The expansion into new markets gives companies new challenges and unprecedented dynamics which contribute significantly to the growth of the company. The expansion of business into international markets occurs as a result of reasons such as saturation in the current operating countries given the number of stores opened. Thus, the expansion into new markets results in more business development which requires sustainable distribution systems and better processes to be considered to help them enhance efficiency and competitiveness in the new market. As a general trend, companies seek to ensure that there are sufficient products available for distribution and that they are positioned correctly at the right time and at the right place.

What transpires from the foregoing discussion is that companies must have the necessary supply chain technology for order fulfilment. Notably, customers remain loyal to brands or companies that focus on customer satisfaction and service delivery. This would also entail how best a company meets consumer demands and product availability internationally when such products are needed by the customers. The growth in the number of distribution centres towards creating a sustainable distribution system for the African marketplace is a means towards realising this fulfilment. Servicing the African market in a way that instils customer valued commitment requires the opening of distribution centres in the three corners of Africa (East, West, and South). The level of service and customer satisfaction cannot be fully achieved at the store level without considering the full supply chain process, the product and its raw material, product manufacturing, logistical process, storage and product availability in the store. The non-availability of a product in a store when it is demanded by customers creates problems that dissatisfy the customers since their needs are not met. Customers' consideration to buy at other competitor stores is accounted for by the

lack of service delivery and the non-availability of products needed at a given time. In this regard, this study sought to ascertain better and efficient ways of improving service delivery in the African international market which will result in customer satisfaction and loyalty to a company.

1.2   Background to the Study

According to De Villiers, Nieman and Nieman (2008), distribution centres are places where raw materials, work-in-progress, intermediate and finished goods are stored on an interim basis for an onward delivery to retailers and finally to customers. Lawrence, Jennings and Reynolds (2003) are of the view that supply chain distribution centres are more of an information base centre rather than inventory base centres due to the large amount of information sharing that flows therefrom. Retail companies do not only want to supply customers with their products but also position their products strategically at the right time and at the right place. In doing so, the necessary supply chain technology for the fulfilment of orders is one aspect that is considered. Customers remain loyal to brands or companies that focus on customer satisfaction, service delivery and the availability of products when demanded. Thus, this study sought to ascertain that increasing the number of distribution centres to create a sustainable distribution system for the African marketplace is a means to manage this fulfilment. The logistical processes of the said company will surely be effective with a clear understanding of an effective distribution system and acquisition of a skilled human capital capacity to execute reasonable decisions that are targeted towards achieving the business objectives in question.

1.3   Statement of the Problem

Expansions into the large international market for a strong solid company includes features in terms of goodwill, increased profit, competitive advantage and a large customer base. As Mr Price Group has entered the international market, it is imperative that certain level of customer service and product delivery in the different regions in the African markets handled with the utmost care. These expansion decisions must ensure that products are readily available to customers at the right time and at the right place. For meaningful customer satisfaction, products must be correctly positioned and available without a hitch. This quest for navigating the African marketplace can culminate into its realisation by having the ideal centralised, decentralised or hybrid supply chain distribution systems and technology.

The main aim of this study, therefore, was to examine the influence of centralised, decentralised or hybrid processes in relation to service delivery, human capacity as well as supply chain technology.

1.4 Research Questions

(a) To what extent does the Supply Chain Distribution System support the expansion of Mr Price to reach the African marketplace?

(b) How does the sustainable retail distribution system improve product availability across the African region?

(c) What are the challenges of inventory positioning on the existing outbound and inbound product flow systems across the African continent?

(d) What is the influence of the Supply Chain Distribution Technology on the availability of real time information and on the visibility of inventory?

1.5 Research Objectives

(a) To establish the extent to which a centralised or decentralised supply chain distribution system supports the expansion to the African marketplace.

(b) To examine how the sustainable retail distribution system improves product availability across the African region.

(c) To ascertain what the challenges of inventory positioning on the existing outbound and inbound product flow systems are across the African continent.

(d) To establish what the influence of the supply chain distribution technology is on the availability of real time information and visibility of inventory.

1.6 Theoretical Framework

The theoretical framework that was used in this study is the Service quality delivery theory. Service delivery management is a process model that is based on the service marketing component and has as its objective the positioning of a service while at the same time serves as a service delivery management tool aimed at improving service encounter processes.

1.7   Significance of the Study

Since Mr Price has entered the international market industry, it is imperative for the group company to establish whether or not it has capacity to compete at that level. It is also important to decide on whether it is still viable to continue upholding the use of the centralised distribution system in its current operation. Such findings will most likely facilitate the decision on whether or not to continue with the use of the centralised system. Such continuity would hinge firstly, on whether maximum positive benefits to the organisation accrues. Secondly, continuity in this regard would be dependent on the form of disadvantage deemed to be impeding the achievement of a set defined objectives of the group company. Mr Price group must also consider the availability of human skill with available resource capacity to participate competitively in the international market. The introduction of a centralised distribution system in remote locations in Africa would possibly remedy the logistics process at the distribution centre not only in terms of moving merchandise most efficiently and also in minimising the lead time and thereby increase cost saving. In terms of delivery, customers are more likely to become more satisfied and loyal to a dedicated African retail industry.

1.8   Justification for the Study

This study is responsive to the current process and deficiencies observed when customers' orders take time to reach other African countries. At Mr Price, a customer order first comes into South Africa and gets stored away in a bonded area in the warehouse. After inspection, the road transportations are used to convey the goods to the retailers in other African countries. This journey might take up to three (3) months before it is received by the retailers.

This study, therefore, sought to establish possible ways of minimising lead time by identifying ways by which the customer orders can be transported directly from the supplier countries to the African trading countries so that customers can have the products in store as and when required. This study thus contributes to the decisions that are made by Mr Price Group management to achieve operational effectiveness.

1.9   Research Methodology

1.9.1   Research Approach

Quantitative research concentrates on generalising data across populations (UKaid, 2013:4). In this study, quantitative research approach was employed. This design uses objective data and depends on statistical and numerical data. Quantitative research is described as a technique used to test theories by examining the associations between variables whereby the variables are measured on instruments using statistical procedures and packages (Creswell, 2014:4).

1.9.2   Research Strategy/ Purpose

According to Saunders, Lewis, and Thornhill (2012) research strategies are used to collect valid data which can contribute in the achievement of the research aims and objectives. Notably, a descriptive research design was employed in this study. As asserted by Hair, Celsi, Money, Samouel, and Page (2011:147), descriptive research describes a state. Thus, associations between variables in descriptive statistics are assessed using statistical tests. Hair, Celsi, Money, Samouel, and Page (2011:149) aver that descriptive research is considered and used to obtain data that designate the traits of the study in question.

1.9.3   Study Site

The study was conducted in Durban, KwaZulu-Natal, at both the head office of Mr Price Group in the Durban central business district (CBD) and the Distribution Centre in River Horse North, Durban. Due to the scarcity of resources such as travel costs and the availability of communication devices, this study was only conducted using respondents from within South Africa.

1.9.4   Target Population

The target population (400 people) constituted the respondents, namely, representative from the supervisory and managerial levels of logistics (out-bound and in-bound), distribution centre, operations, supply chain and shipping, IT and systems managers and engineers.

1.9.5   Sample

The sample included the middle and lower managerial levels, top management level both inclusive of IT, supply chain and shipping, logistics, distribution centre and planning departments.

1.9.6 Sampling Technique

The process by which observations are designated is called sampling (Babbie, 2014:197). A sampling frame is defined as the group of target resources where a sample is selected. This study employed a quantitative research methodology wherein probability sampling was used to select the respondents to be involved in the sample.

1.9.7 Sample Size

The total population of the staff at the distribution centre and head office comprises four hundred (400) at the supervisory and managerial levels. According to Sekaran and Bougie, (2011:293) sample size is mostly determined by the anticipated confidence level and precision. In line with the table, a population size of four hundred (400) corresponds to a sample size of one hundred and forty-eight (148).

1.9.8 Data Collection Method

According to Spark, Pharm and Willis (2013:469), questionnaires are cost reducing and are a time management effective way of collecting information from respondents. The respondents were contacted by means of written communication. According to Bless, Higson-Smith and Sithole (2013:117) self-administered questionnaires are carried out by the respondent without the interviewer's support. Approval by Mr Price Company to conduct the study allowed for the distribution of the questionnaires to the staff.

1.9.9 Data Analysis

The questionnaires were handed to the respondents to ascertain their views and perceptions of the supply chain distribution of the African Market. After the data collection, the questionnaires were sifted and edited for error detection and correction. The findings deriving from the data analysis are presented using tables and figures. Univariate analysis such as central tendency measure was used to determine the mean, mode, median, standard deviation and variance. Bivariate analysis was also used where hypotheses about two related means were tested and the Chi Square was employed to determine the association among two or more variables (Sekaran and Bougie, 2011:320). The Statistical Package for the Social Sciences (SPSS) which is an advanced statistical analysis tool, was used to analyse the data.

1.10   Ethical Considerations

The approval to conduct this study was obtained from the University of KwaZulu-Natal (UKZN)'s ethics committee. A gatekeeper's letter was obtained from the Registrar of the university. As soon as the ethical clearance was received, the questionnaires were circulated to the respondents. The respondents' confidentiality and privacy were protected and they were also informed of their right to withdraw from the research study process. This was done with the view of ensuring that the integrity of the research study was maintained without fail or compromise.

1.11   Limitations

Even though the study is about the African market, for the very reasons already cited above, it was conveniently conducted in South Africa. The amount of time to respond to questionnaire by the respondents was a result of some respondents having busy schedules and unavailability which contribute immensely on the limitations already alluded above.

CHAPTER TWO
LITERATURE REVIEW

2.1. Introduction

The world we live in today has evolved speedily due to man's desire to make things easier and flexible. Globalisation, climate change, complexities in customer demands for customised products, the cravings to stay competitive and remain in the game of business have all contributed to the varied avenues sought by organisations to achieve their objectives. Retail organisations need to ensure that the right products are delivered to customers at the right place, in the right conditions and at the right time (Agbor and Eriksson, 2011:11). Hence, the issue of distribution becomes a critical aspect of every logistics facet of the organisation.

Managing distribution plays a critical role because it brings about the certainty in attaining good profits for organisations. Interestingly, the African continent seems to be left out when compared to the European continent economy and developments. Most countries in Africa are developing gradually and are really engaging in trade on an international basis. South Africa is amongst those African countries that have attained increased development in their economy. Other countries include Egypt, Ghana, Nigeria and Kenya. Hence, in keeping up with the pressures and the impact of external market forces, businesses in Africa must find avenues to devise means of reducing overall logistics and supply chain costs to amalgamate their business processes, especially the distribution of products and services amongst themselves. Notably, distribution is the main bridge between manufacturers and customers because products flow between these parties. To increase development in the African continent, the countries listed above must carve out a distribution hub that will ensure speedy and efficient dispatch of goods to attain high customer service level. It is of importance, therefore, that an optimal way of redesigning the African marketplace distribution network is given the consideration it deserves.

2.2. Defining Distribution

Chopra (2003:132) defines distribution as the business activities and steps taken to keep and move products from the supplier to the customer in a supply chain. According to Yang (2013:2), distribution is defined as the system of activities involved in the movement of products from points of supply to points of demand via transshipment points such as warehouses. It is a major contributor to profitability in any company.

Physical distribution is part of supply chain, and its purpose is to deliver goods/services to the consumers. More specifically to the demand points of the finished product in the right place and time, in the right quantity and at the lowest possible total cost.

The selection of the optimal physical distribution system, takes place when the enterprise can answer the following questions (Serdaris, 2014:484):

a) What is the nature of the market and the customers to which the enterprise aims at?

b) What kinds of products will be traded?

c) Do these types of products require special treatment?

d) What are the distribution objectives for company?

e) Will many material-transshipment warehouses be created and if so, to many different points?

f) What is the cost of the distribution network?

The objectives, which the distribution system is put through to achieve, are the following:

1) The management of the distribution channel with the lowest possible cost through certain procedures (Ioannou, 2005):

    a) Planning financial resources to be used within the supply chain

    b) Planning of the distribution networks and routes of which it is composed

    c) Selection of partners within the distribution channel

    d) Control of the system performance.

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2) Ensuring that the products being distributed are of high quality. Namely the maintenance of quality in a stable manner and the ability to respond to consumers' needs and desires.

3) Ensuring the highest level of customer service, with the aim to convert them into "loyal customers.

4) Ensuring maximum flexibility in the distribution network even in cases where problems like adverse weather conditions occur, to maintain the credibility of the company

2.3. Defining a Warehouse

A warehouse is a hub in a logistics network where goods are temporarily stored or rerouted to a different channel in the network. A basic distinction can be made among supply, handling and distribution warehouses (Kwateng, Manso, Osei-Mensah, 2014:86)

According to Bowersox, Closs, Cooper and Bowersox (2013:223), warehousing integrates varied aspects of logistics operations. It was conventionally viewed as a place or storage for inventory holding. But currently, its functionality involves the mix and modification of the inventory to meet customer requirements. A warehouse operation involves a complex series of processes. The functions include receiving products into the facility, storing the goods and dispatching the products when required. All these functions must be carried out well for the facility to effectively and efficiently operate. According to Bowersox, Closs, Cooper, Bowersox (2013:223), warehouse types include distribution centres, consolidation terminals, breakbulk facilities and cross docks. This study discusses only the distribution centre and cross docking types of warehouse.

Supply warehouses are usually part of the production operation and are used to store raw materials, auxiliary supplies and other resources needed for production as well as semi-finished products and finished goods used during seasons (Kwateng, Manso, Osei-Mensah, 2014:88). Transshipment warehouses house goods for short periods between their transfers from one means of transportation to another. They are frequently operated by logistics providers and retail companies (Kwateng, Manso, Osei-Mensah, 2014:88). With cross-docking, manufacturers send goods that have been pre-picked for retail outlets to the retailer's warehouse. Here, shipments from various

manufacturers for the respective retail outlet are batched and then delivered together. This dispenses with the need to pick goods bound for separate retail outlets in the retailer's central warehouse (Kwateng, Manso, Osei-Mensah, 2014:89).

2.4. Defining a Distribution Centre

Baker (2006:207) highlights the importance of distribution centers as key nodes in some supply chains and it accounts for close to twenty-two percent (22%) of the entire logistics costs. He also notes that the critical nature of a distribution centre contributes to either the success or failure of any business. Today's retailers have increasingly become smarter about consumer demands due to the fact that information technology (IT) changes the way businesses are conducted. According to Bowersox, Closs, Cooper and Bowersox, (2013:224), the term distribution centre became widely utilized all over industries to capture the dynamic development from a passive storage to strategic inventory assortment. Ecklund (2010) highlights that distribution centres (DCs) are efficient in consolidating products for onward delivery to customers, reduction in transportation costs and performing a range of value added services. DCs do not only enhance the effectiveness of the supply chain, but also permit the strategic location of products and service positioning closer to major markets and customers - place utility economic principle (Ecklund, 2010).

2.4.1. The Difference between a Distribution Centre and a Warehouse

A (DC) is very different from a warehouse in that it identifies selects and delivers stock and products to its customers within a short timescale (Pienaar and Vogt, 2012:305). A distribution centre requires adequate stock to demands of its current orders. It can restock regularly in lesser quantities. But a warehouse caters for large quantities of products as soon as these products are produced. A warehouse is a storage method that keeps the product batch together and allows a well-organized receipt of the product into the facility (Bowersox, Closs, Cooper and Bowersox, 2013:224).

2.5. Cross Docking

Cross docking as a distribution tactic is not new. However, its use continues to grow with the popularity of just-in-time (JIT) methods, and as supply chain concepts such as collaboration take hold, and sophisticated information technologies proliferate. Crossdocking is primarily a

warehousing practice, but for it to be efficient and successful, there has to be close coordination and continuous, high-quality information flow among manufacturer, distributor, and customer levels.

Pienaar and Vogt (2012:305) highlight that cross docking is a certain facility type in the supply chain where products are received from the suppliers, sorted without being stored and then moved efficiently to the customers. As such, cross-docking involves a continuous movement of goods from the inbound to the outbound transport. It is notable, therefore, that cross docking is a stock management system used for handling stock received and transferred directly from the receiving dock to the shipping dock. The process helps in the reduction of the need for a warehouse which is a costly factor to a company. Hence, companies have distribution centres to help facilitate the receiving and transferring of goods to their locations (Bowersox, Closs, Cooper and Bowersox, 2013:226).

The main objectives of cross docking are to reduce not only the amount of stock handling but also the storage costs which can be channeled for another use, improve on delivery of stock to store, and satisfy the company customers (Vasiljevic, Stepanovic and Manjlovic, 2013:92). This process minimizes the storage and order-picking functions in a distribution centre. The ideal system allows for a supplier's truck to be transported to the distribution center where the cross-dock process is applied and the stock is directly sent straight to stores. The way in which stock is handled at cross docking terminals requires a certain planning level. These include few tasks or considerations such as unloading shipments delivered by inbound trucks, sorting the goods according to designated destinations and loading onto outbound trucks' delivery (Vasiljevic, Stepanovic, Manojlovic, 2013:94).

Cross-docking operations need to be carefully synchronised in terms of time scheduling whereby the suppliers need to book an appointment in the distribution center and must adhere to this appointment. This enhances the synchronisation between the inbound and outbound trucks to execute the work effectively and efficiently (Vasiljevic, Stepanovic and Manjlovic, 2013:93). Most retailers in South Africa have made plans to move their businesses into the African continent but all these comes with unified challenges (Mack, 2012:16). Mack (2012:16) avers that the huge

issue involved in expanding business into Africa includes difficulty in the movement of goods, long distance transportation of goods, widespread corruption, border posts bureaucracy and dilapidated infrastructure. This leads to the focal point of this study namely, the supply chain distribution system in African marketplace.

2.5.1. Cross-Docking Variations by Complexity

2.5.1.1 One touch – products are touched only once as they are received and loaded outbound without being placed on the warehouse dock. This is the highest velocity "load as you go" and the focus is on cross-dock productivity (Kiisler and OÜ, 2014:10).

2.5.1.2 Two-touch - products are received and staged on the dock then loaded outbound without being put into storage. The focus ison outbound load optimization and gaining transport efficiencies (Kiisler and OÜ, 2014:10).

2.5.1.3 Multiple-touch – products are received and staged on the dock, then reconfigured for shipment and loaded outbound directly from the warehouse dock. This method offers greatest opportunity for customization and end-user value adding. Received products can be sorted by suppliers by articles or not, they can be labelled for end customers or not (Kiisler and OÜ, 2014:10).

2.6. Supply Chain Distribution Models

Companies that have a supply chain department and various business units, use one of the two methods for making decisions for their supply chain. Centralized decision making wherein the supply chain decisions are centrally made at the corporate level and the decentralized decision making where supply chain decisions are usually made at the business unit level (Rangavittal and Sohn, 2008)

Decision-making in a supply chain network can be achieved in a centralised or a decentralised manner. For the centralised arrangement, there is a central authority that handles decision-making, while in a decentralised arrangement the individual units can take decisions on their own. Practically, no supply chain can be entirely centralised or decentralised, as both approaches have their pros and cons (Sahay and Lerapetritou, 2013). According to Saharidis, Kouikoglou and Dallery (2009:118) common strategic decisions are usually carried out centrally while operational decisions are decentralised.

The outcomes from each approach depend on the actual environment and the precise decisions taken. The impacts of centralisation in varied supply chain issues have been studied in the past using different approaches. Chen and Chen (2005:3199) studied the impact of centralisation and decentralisation on the multi-item replenishment issue in a two-echelon supply chain. They propose adoption of both the centralised and decentralised decision models after having proven the optimal features of both models in reducing costs. Duan and Liao (2013:198) formulated optimal replenishment policies of capacitated supply chains that operate under the centralised and decentralised control approaches with a simulation based optimisation outline.

The conclusion was that it is valuable to implement centralized control. It was in light of this, therefore, that these authors suggested a mechanism that will organise the decentralised system where each partner in the chain benefits. In another study, Hernandez, Poler and Mula (2009:129) studied a supply chain architecture based on multi-agent systems to support decentralised collaborative processes. These authors considered a multi-agent based system modelling technique. Sitek and Wikarek (2013:1211) presented a paper on "a hybrid approach to supply chain modelling and optimisation". The mathematical and logic programming were integrated. The approach was presented and implemented in both mathematical programming and hybrid environment. The results show that using a hybrid approach for all classes of models produces better and faster solutions. The work of Belavina and Girotra (2012:1) discusses the benefits of decentralisation decision making in supply chains. The authors' analysis demonstrates the accepted innuendo that decentralized decision-making inefficiency is just a thing of one-off trade. In this regard, they identified conditions in their result associated with continuing trade. The evolving phenomena from their findings depict an explanation of the relevance of decentralised supply chain towards good performance in urban logistics, micro- retailing and markets. The choice of selecting between a centralized or decentralised distribution network-structure is mostly affected by cost-service tradeoffs (Nozick and Turnquist, 2000). Notteboom (2009) also highlights that the product type and the delivery frequencies also impact on the choice between various distribution models. The ensuing chapter, therefore, further discusses the different approaches of the distribution system.

2.6.1. The Decentralised Distribution Model

Decentralized Warehouse is when there are multiple warehouses, each warehouse is treated as a separate entity rather than a whole. The warehouses have their own locks and keys. The stock is organized in a way that will help in optimizing the inventory (Lee, 2014).

As an organization grows, the challenges faced in the business environment becomes difficult to handle especially in managing product flow from the supplier to the customer. Generally, decentralisation involves the spreading of decision making whereby employees are empowered to act on behalf of the organisation although its application is different in companies. For ease of activities and quick response to customer demand, decentralised distribution model becomes effective. According to Pedersen, Zachariassen and Arlbjorn (2012:360), the main critical factors of decentralisation include delivery times and costs decrease, closeness to customer in terms of proximity and increase in customer service.

A study carried out by Wanke and Zinn (2004) on Brazillian companies established that companies that have a high inventory turnover probably utilize a decentralized arrangement. Most of the contributions to academic knowledge (Abrahamsson, 1993; Croxton and Zinn, 2005) suggest that decentralisation is mainly attributed to customer service and transportation efficiency. At times in retail industry, there is not enough capacity for stock in the warehouse but still some distributors insist on using the decentralisation technique as a result of their insecurity as regards the benefits of centralisation and the fear of losing site control (Zivotic and Pesic Radovanovic, 2013:281).

2.6.1.1 The Advantages of Decentralised Distribution Model

a) The storing and controlling function can be easily accomplished.

b) Delays in material handling will be eliminated thus ensuring savings in material handling costs.

c) The chances of loss by fire are reduced with a decentralized warehouse.

d) The need for any internal transport costs between the distribution centers is minimized under a decentralized warehouse.

e) Finally, needs of individual departments can be easily fulfilled with a decentralized setup.

2.6.1.2 The Disadvantages of Decentralised Distribution Model

a) Higher Costs of supervision as more experienced people are needed to supervise the day to day functioning of the warehouse.

b) A decentralized warehouse requires a very high amount of investment as facilities have to be set

up in multiple locations with the latest equipment, technology and inventory management systems.

c) More time spent in stock taking.

d) Higher cost of staff and stationery.

2.6.2. The Centralisation Distribution Model

According to Kokemuller (2014), Centralizing warehousing is a system where a retailer or its supplier maintains a single centralized warehouse versus several facilities spread out to cover an area. A centralized approach offers several benefits compared to a decentralized warehouse system.

According to Naude (2009:105), decisions on a centralized system are conducted centrally for the entire supply chain network. Each facility in a centralised system which identifies and carries out its strategic decisions without taking into consideration other facilities impact on its supply chain (Simchi-Levi, Kaminsky and Simchi-Levi, 2008:231). Zivotic and Pesic Radovanovic (2013:279) describe the centralised strategy as representing an organised product delivery from suppliers to a hub, usually in complete load quantities rather than to each store. When this strategy is utilized, retailers' logistics cost increase with overall stock but better visibility of supply chain is achieved. The primary critical factor of centralisation is lesser inventory costs. Other factors include delivery precision, lower tied-up capital, reduced learning cost and information sharing. Using the square root law of mathematics, Croxton and Zinn (2005) argue that centralisation yields a lower inventory level. For instance, in 2012, Pick n Pay opened its new distribution centre (DC) in Philippi, Cape Town. The divisional supply chain director, highlights that the model will allow Pick n' Pay to operate more cost effectively and increase customer service simultaneously.

Benefits of centralised distribution includes good on-shelf availability, less store congestion and low transportation costs to the supply chain. Centralised decisions are important because they allow easy change of processes; enable specialisation in a function which results into the development of experience. Centralisation also enable economies of scale as decisions are uniform across all the business units. A single point of delivery is attained in centralised distribution (Durham, 2013:10).

The benefits of centralisation notwithstanding, there are also drawbacks of centralisation. For instance, the decision made in centralization often reduces the control of local business as it increases the response time and decision makers may not have all the information needed to make good decisions (Rangavittal and Sohn, 2008:15). Other companies, such as Woolworths supply chain, have adopted a centralised distribution model which encompasses all inbound logistics, transport operations, deliveries to stores and central distribution centres. Notably, the model allows Woolworth's supply chain to sustain and deliver a range of cost-effective products across different stores in varied locations (Woolworths report, 2013).

2.6.2.1 The Advantages of Centralized Warehouse

a) Logistic Advantage:

Lower Fixed Distribution Costs: Since fewer resources are needed to run one warehouse as opposed to several, centralization has a positive effect on costs relating to warehousing activities.

Lower Variable Costs: Variable costs of warehousing such as labor, transport etc, can be kept at a minimum or at a constant when the total amount of inventory decreases overtime.

Lower Inbound Costs: It means that distributors or a warehouse of a company can save on shipments from manufacturers as a centralized warehouse can take in large quantities at a single location, versus having shipments go to multiple locations. This enables better value not just to the company but also to the end customer and ensures higher profit margins (Kokemuller, 2014).

Integration of Activities: Centralization helps in integrating all the warehouse and logistical activities under one roof and these results in lower management costs. As such the company can concentrate on other core competencies.

Lower Learning Costs: Since all products are centrally located in one warehouse, old products can be phased out quickly and the distribution system can adopt faster to volume fluctuations.

b) Service Advantage:

Shorter and Secure Lead Times: A centralized warehouse helps in achieving shorter and secure lead times on all the products. The warehouse can send goods and other consignments to customers much faster thus reducing lead time.

Higher Delivery Precision: Since all the products are centrally located in one warehouse, more deliveries can be carried out correctly. The number of deliveries and the time windows can be matched simultaneously.

Differentiation: A centralized warehouse can store products of various shapes and sizes. The possibility of customizing solutions increases with a centralized system.

Better Information: With all the products being centralized, it is easier to manage inventory levels. Consequently, the customers can be supplied with more precise and accurate information on delivery times by the company.

Customer Service: The best people, equipment and inventory systems are all centrally located in a centralized warehouse. This is beneficial as the warehouse can focus on the needs of the customers and provide good customer service (Kokemuller, 2014).

2.6.2.2 The Disadvantages of Centralized Warehouse

a) Delay in sending materials to the departments and branches.

b) Increase in material handling cost as staff will be required for transportation from stores to the various production units (materialsmanagement.info, 2014).

c) Greater risk of loss by fire because if a fire breaks out, entire stocks can be lost bringing production to a halt (materialsmanagement.info, 2014).

2.6.3. Hybrid Distribution Model

The hybrid distribution model consists of a combination of the key attributes of centralised and decentralised decision-making arrangement (Karjalainen, 2010). In this study, the use of a centralised distribution system seems to be the best model and a key driving force of the distribution centers. In hindsight, the concept of the hybrid distribution system involves more positives. The reason for this is that various dimensions of the centralised and the decentralised modes of distribution are considered during decision making in organisation. This study, therefore, considers the use of the hybrid system of distribution.

2.7.   Retail Distribution in South African Companies

Some retail companies from South Africa have started trading in the African market and have implemented centralized distribution. Such retail organizations include Pick 'n Pay, Checkers/Shoprite, Woolworths, Spar, Massmart and Metro Cash and Carry (Metcash). Woolworths and Pick 'n Pay have food and clothing sections while Massmart and Metro Cash both have retail and wholesale sections. For this study, Woolworths' and Pick 'n pay are considered due to their clothing range as compared to the study site (Mr Price Group).

Woolworths offers products that range from food, hardware, fashion and financial services sand these are all managed through a central procurement system. Woolworths emphasizes its brand growth by satisfying its customers and maintaining customer allegiance. This is achieved through the company's dedication in building and maintaining long term relations with its customers. Such relationships are maintained because Woolworths has managed to understand its customers and thus ensures not only product accessibility but also environmental concerns which extend to supporting underprivileged pupil education using the initiative of the "My School" program (Woolworths report, 2013).

In addition to satisfying the above, Woolworths uses a centralised distributions system which covers all inbound and outbound logistics, distribution centers and transport operations. The centralised distribution system has simplified distribution for the supplier, deliveries to stores, lowered costs to operate and improve the control of logistics. Hence, Woolworths has made the centralised distribution system the core platform for increasing its growth levels. Notably, the system allows the retailer to deliver products to customers as promised and is cost effective with increased product availability across a wider geographical location (Woolworths report, 2013).

Pick n' Pay is well known for its food store outlets and has recently entered the fashion market and has since implemented the centralised distribution system. It expanded by having more distribution centers via a centralised distribution system. According to Van der Merve, the companies supply chain director, the introduction of more distribution centers and implementing the centralised distribution system has had customers benefiting the most by means of better

customer services, better quality and fresher produce. Notably, Pick n' Pay has increased volumes through the distribution centers by 10.8% and reduced the cost per case delivery by 6.5% and improved product availability by 2.4% (Magwaza, 2014).

Having a centralised system of distribution exhumes positive aura towards achieving competitive advantage but most importantly is acknowledging using both the centralized and decentralized model in the firm in question. The hybrid model can permit a ground-breaking medium towards achieving profitability and cost effective structural arrangement to a firm. The next section discusses the theoretical framework of the study.

2.8.   Theoretical Framework

The theoretical framework that is employed in this study is the Service delivery management. A goal of any institution, industry or business is to deliver quality service at all cost to the customers. Hence, this study considers the framework of Kumar and Kumar (2004) which is mostly preferred in measuring service quality, "can be conceptualised as the development of a service delivery strategy for industrial systems and products" (Kumar and Kumar, 2004). This framework was developed by Rajesh Kumar and Uday Kumar in order to focus on the performance enhancement through the use of service delivery strategy and foster customer satisfaction. Notably, Service delivery management is a process model which is based on the service marketing component and positioning of a service, while at the same time serving as a service delivery management tool aimed at improving service encounter processes (Kumar and Kumar, 2004). Service delivery management as a model has the potential of increasing not only customer satisfaction but also quality perception. Kumar's consolidation of the framework on literature survey and its use to the study influences the service delivery process, enabled them to conceptualise the service delivery framework (Kumar and Kumar, 2004).

The framework consists of five aspects: tangibility, reliability, responsiveness, assurance and empathy. Of all these dimensions of service delivery, reliability is the core (Tavanazadeh and Aligholi, 2014:3117). If an organisation is not reliable or cannot be trusted to deliver on its promises, then there is no need of having a business. Hence, service quality must be upheld when reliability is in play. It is for this reason that a little bit of explanation is given in this study on the dimensions of service quality. Tangibles (having the correct resources such as physical facilities,

equipment and the required capacity), reliability (demonstrated as the ability to deliver the expected results to the customer), assurance (employees having the requisite skills and knowledge to perform duties to the best of their potential), empathy (having an understanding to command individual attention and care) and responsiveness (exhibiting critical communication skills necessary for professional interpersonal relations).

2.8.1. Service Quality

Service quality is defined as the difference between customers' expectations and perceptions of service and can often be seen as a way to build a competitive advantage (Ivanauskienė and Volungėnaitė, 2014:113).

Service quality and commitment are related to loyalty. There are two kinds of reasons that can determine relationship breakdown between the customer and the organization - the natural causes (customer demand extinction) and artificial causes (inadequate product specifications, insufficient quality of service level) (Ivanauskienė and Volungėnaitė, 2014:114). It is obvious that in order to increase customer loyalty the organization must seek to eliminate both natural and artificial customer exit reasons.

Service quality analysis makes an impact on the development of the customer loyalty concept. Service quality can be regarded as one of the most frequently analyzed customer loyalty determinants. Tangible and intangible constituents of service quality were important in evaluating either customer view of an organization or customer trust in an organization (Ivanauskienė and Volungėnaitė, 2014:114).

Due to increased competition among businesses, service quality becomes a watch word and is paramount in organisational objectives. Notably, service is a vital success factor in the supply chain process with intrinsic value as an operational indicator. Thus, service quality is a complete assessment by customers of services rendered by a firm to determine whether or not their expectations and needs are met (Saghier and Nathan, 2013:2). There is quality in service rendered to customers when it consistently conforms to customer expectations as stated by several practitioners. Service quality is also defined as the difference between the customer's expectation from the service met and the discernment of the service received (Munusamy, Chelliah and Mun, 2010:400).

The concept of service quality has, arguably, enhanced the marketing and service management of companies towards achieving competitive advantage with retention, loyalty and customer satisfaction (Lee, 2013; Freitas and Costa, 2012; Ruiz, Castro and Diaz, 2012; Mosahab, Mahamad, and Ramayah, 2010). The primary critical factor for the success of any business is the service quality wherein businesses and competitors shifted this paradigm to the customer as a co-creator of value in the context of customer satisfaction (Vazquez, Camacho and Silva, 2013; Ganesh and Haslinda, 2014:1189).

It is important to know that in wealth creation measured by indicators such as GDP of an economy, service sectors contribute immensely because they offer employment to a vast number of people (Urban, 2010; Tuan, 2012). This is a contributory factor to the service sector growth via its positive influence on the economy. Hence, improving service quality of any organisation has the potential of leading towards competitive advantage (Ganesh and Haslinda, 2014:1194). Thus, since customers are key to the viability and success of a business, it is imperative to guarantee their satisfaction is guaranteed. According to Chopra (2003:124), customer service entails varied components. However, the measures that impact on the distribution network structure include: response time, product variety, product availability, customer experience, order visibility and returnability. Thus, organisations such as the retail industry can achieve customer loyalty through product availability, investing in human capital, having a good information technology and good distribution centre. These aspects are further explained in reference to figure 2.1 hereunder:

2.8.1.1 Determinants Service Quality

According to Emel Yarimoglu1 (2014) there are 9 determinants of service quality and are listed below:

Reliability: consistency of performance and dependability, accuracy in billing, keeping records correctly, performing the service right at the designated time.

Responsiveness: willingness or readiness of employees to provide service, timeliness of service such as mailing a transaction slip immediately, calling the customer back quickly, giving prompt service.

Competency: possession of the required skills and knowledge to perform the service, knowledge and skill of the contact and support personnel, research capability of the organization.

Access: approachability and ease of contact, the service is easily accessible by telephone, waiting time to receive service is not extensive, convenient hours of operation, convenient location of service facility.

Courtesy: politeness, respect, consideration, friendliness of contact personnel, consideration for the consumer's property, clean and neat appearance of public contact personnel.

Communication: keeping customers informed in language they can understand and listening to them, explaining the service itself and its cost, assuring the consumer that a problem will be handled.

Credibility: trustworthiness, believability, honesty, company reputation, having the customer's best interests at heart, personal characteristics of the contact personnel.

Security: freedom from danger, risk, or doubt, physical safety, financial security, confidentiality.

Understanding and Knowing the Customer: understanding customer needs, learning the customer's specific requirements, providing individualized attention, recognizing the regular customer.

Tangibles: physical evidence and representations of the service, other customers in service facility

Figure 2.1.   Conceptual Framework
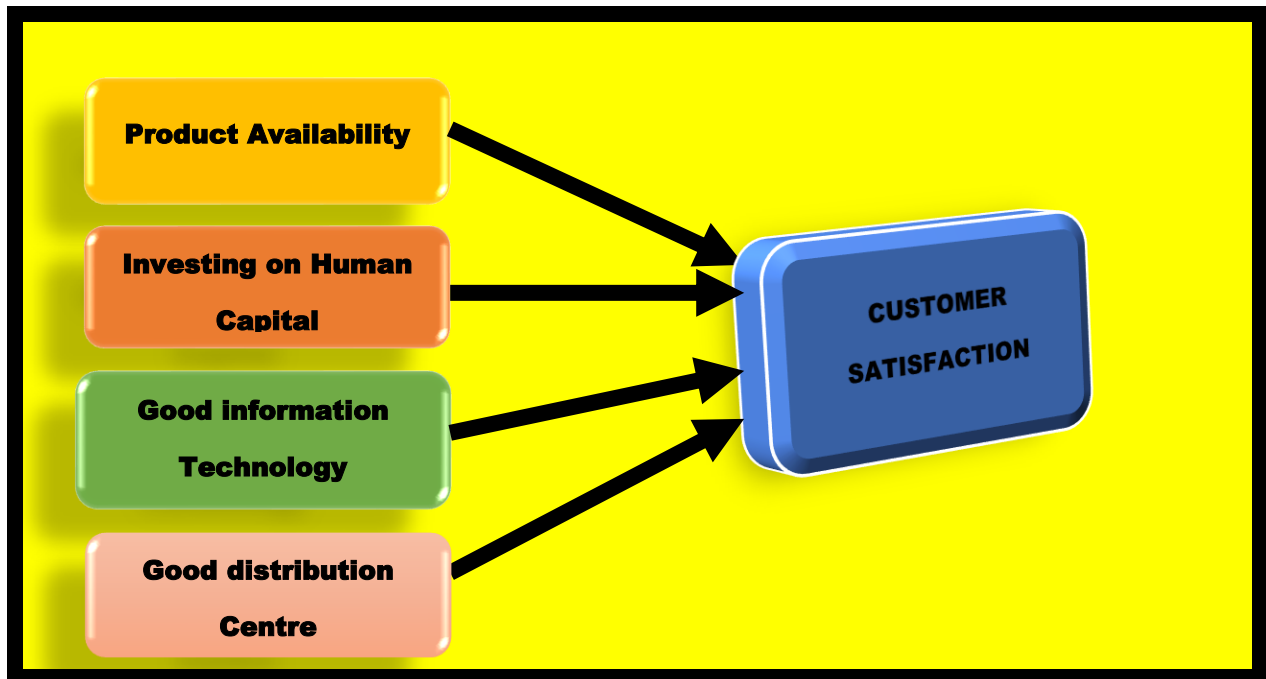
Source: *By Researcher*

2.8.1.1. Product Availability

It bears repeating that product availability entails, among other things, having the right product, at the right time, at the right place and the right quantity for the customers to procure (Grubor, Milicevic and Djokic, 2016:222). According to Reynolds and Cuthbertson (2014:55), distributing the right product mix epitomizes a critical competitive advantage for retailers as it provides a dynamic and open avenue for customers. In the fast-moving consumer goods (FMCG) sector, the task relates to providing an acceptable level of product on-shelf availability (OSA). Hence, customers easily navigate to stores that are well positioned to secure whatever product is needed.

A company's ability to build and maintain customer relation requires employees to understand the customer buying trends and behavior. Ensuring availability is an intricate job for retailers since it entails forecasting customer demands across stores and efficiently managing other supply chain challenges (Conlon and Mortimer, 2010). In the same light, managing high inventory or 'safety stock' results into added cost and operational inefficiency. Hence, importance is placed on detecting issues that relate to products unavailability by the supply chain management team.

Product availability and lack of availability have an equal opportunity to affect customers' intent to buy into a product (Conlon and Mortimer, 2010).

The availability of a product in a store at the right time and right place, minimises the risk of losing customers to competitors. A low product availability level causes stock out while high product availability ensures higher customer demand awareness (Muslimah and Simatupang, 2014:774). A customer will opt to shop at an alternate store or a competitor store if the product they need is unavailable. Broadly speaking, it is natural to have product availability as a positive externality for consumers to maintain product purchase. As soon as the product is available to be purchased when it is required, consumers deem this as a good thing (in most cases).

However, in contradistinction to this position, it noticeable that when products are not available, negativity to the consumer and the brand are portrayed (Steinhart, Mazursky and Kamins, 2013:217). A lead to the importance of product availability influence is that it triggers product relevance by keeping the product in the mind off the customer. Having the right products available, at the right place and at the right time to customers is an important contributory factor towards the success of a retail business (Wyman, 2012:2). Ensuring that products are on the shelf is crucial for any retailer despite this remaining a major challenge (Steinhart, Mazursky, Kamins, 2013:219). The non-availability of products means that disgruntled and dissatisfied customers with be impacted upon with specific reference to the financial performance over the long term (Wyman, 2012:3). Hence, the inventory level or product availability has a positive effect on the sales of the products. Nevertheless, the aspects or dimensions of service quality that can be related to product availability include tangible, reliable and responsiveness. These three attributes of service quality are construed as customer facing attributes (Taghizadeh and Hafezi, 2012:16).

According to Nowakowski, (2008), reliability of the supply process comprises delivery reliability in terms of delivering customers products within a specified time, transport reliability delivering products to customer on time without faults and reliability of logistics support infrastructure include support tools and equipment. The second attribute (responsiveness) has to do with the speed at which products are provided to the customer by the supply chain (Bala and Kumar, 2011:30). Finally, in this study, expectations in respect of the tangible dimensions include the

physical products provided to the customers in having the right quality and quantity with no error or spoilage. Therefore, when these three features of service quality are optimally performed and the products are made available then customers become satisfied with the organisation.

2.8.1.2. Customer Satisfaction

It is important for organisations to take actions towards enhancing customers' awareness of changes in quality since this strategy stimulates consumer behavior for increased revenue (Cruz, 2015:38). Customer satisfaction has been a subject of great interest to organisations and researchers alike. In recent years, organisations were obliged to render more services in addition to their offers. Thus, today the quality of service has become an aspect of customer satisfaction. It has been proven by some researchers that service quality is related to customer satisfaction (Agbor, 2011:15). The principal objective of organisations is to maximise profits and minimise cost. Profit maximisation can be achieved through increase in the sales with lesser costs.

One of the factors that can help to increase sales is customer satisfaction because satisfaction leads to customer loyalty, recommendation and repeat purchase (Agbor, 2011:5). Those who buy the goods or services provided by companies are customers. In other words, a customer is a stakeholder of an organisation who provides payment in exchange for the offer provided to him by the organisation with the aim of fulfilling a need and to maximise satisfaction. Sometimes the term customer and consumer are confusing (Akbar, 2013:44). A customer can be a consumer, but a consumer may not necessarily be a customer.

When a consumer/customer is content with either the product or services it is termed satisfaction. Client happiness, which is a sign of customer satisfaction, is and has always been the most essential factor for any organisation. Customer satisfaction is defined by Cengiz (2010:175) as "the consumer's response to the evaluation of the perceived discrepancy between prior expectations and the actual performance of the product or service as perceived after its consumption". It is notable, though, that a proper definition for customer satisfaction is not known yet since many authors have defined the concept differently. According to Schiffman and Karun (2004), customer satisfaction is defined as "the individual's perception of the performance of the products or services in relation to his or her expectations". In a nutshell, customer satisfaction could be the pleasure that a customer obtains from consuming an offer.

According to Tavanazadeh and Aligholi (2014:3116), when the quality of service rendered to a customer exceeds expectations, the level of quality is considered high and this leads to customer satisfaction. In a supply chain management store, fewer staff are needed to manage orders and the inventory since the focus is on customer service. Improving the service levels in the store is critical as it links the product flow from the vendors to the individual stores. Customers are always aiming to get maximum satisfaction from the products or services that they buy. Thus, winning in today's marketplace entails building customer relationships and not just enhancing the products' mix. Building customer relationship means delivering superior value over competitors to the target customers. Whether an organisation provides quality services or not depends on the customers' feedback on the satisfaction received from the products consumed since higher levels of quality lead to higher levels of customer satisfaction (Dawar, 2013:3).

2.8.1.3.   Investment in Human Capital

Human capital comprises the skills that a workforce force possesses. The flow of these skills becomes positive when the return on investment exceeds the cost both directly and indirectly in an organisation (Goldin, 2016:56). The focus on training and development of employees has the potential of raising the skills' capacity of the employees and thereby improve the organisational productivity and efficiency (Kenneth, 2013:123). According to Kenneth (2013:125), although capital investment in the form of training and development is a costly process, it nevertheless benefits an organisational team in the long run. Training and development also educate the employees by advancing their skills for better performance levels and developing a work ethic. Investment in training and development certainly benefits the employee through equipping them with skills that improve their productivity and thereby increase their likelihood of promotion as they become attractive in the job market (Murphy and Topel, 2014:114).

According to Murphy and Topel (2014:105), studies have shown that the more companies invest in their employee, the more the organization benefits by having as increase in productivity, attainment of competitiveness and profitability (Murphy and Topel, 2014:15). The investment in human capital can improve the distribution centre's productivity and efficiency levels by improving the knowledge, skills, and abilities of its employees. Research suggests that an increase of ten (10) hours per year in the amount of training per employee leads to an increase in productivity of 0.6 percent (Pitt, Rosenzweig and Hassan, 2010).

2.9.   Logistics Process at the Distribution Centre

The concept of a distribution centre involves the receiving of products or goods from the suppliers for onward delivery to the customers. This fact notwithstanding, some stock is stored as inventory for replenishment when the goods are reduced due to high demand of the product in that specific store or region. Notably, the distribution centre is divided into three core areas namely: inbound area, outbound area and the pick order area with supervisors and managers in top operational positions. It is also important to probe into the factors such as dwelling time, lead time, and cross-docking that influences the distribution centres function.

2.9.1.   Inbound Logistics

Inbound logistics refers to the transport, storage and delivery of goods coming into a distribution centres. The inbound logistics system focuses on maintaining the relationship between companies and their suppliers. Inbound logistics system cover anything that your company orders from suppliers, which can include tools, raw materials and office equipment in addition to inventory.

In a distribution centre, the truck arrives and the driver needs to have an appointment code that allows the truck to enter the premises. This code with the truck's arrival information is sent to the inbound receiving system which is then scanned by an "in yard" foreman (Agas, 2013:2). The Truck driver drives to the unloading bay allocated to him/her according to what product is loaded on the truck to deliver. This is done in line with the vehicle's scheduling system that has been assigned to the truck documents.

The customer service level and logistics distribution cost are influenced directly by the vehicle scheduling (Zhang and Zhang, 2008:55). The stocks are offloaded onto a conveyor belt that splits into two destinations, one Pre-pack which goes straight into store, which is about seventy (70%) of the total order. The remaining thirty (30%) are retained in the distribution centre for replenishment of the pre-pack (Agas, 2013:12). The Post stock forms part of the outbound stock and the Pre-Pack continues to go to the PANDA system. This system scans the code that is on each box and separate them to varied sections by placing another store code on them to correctly identify the courier trucks that take them to the depot where stock is separated again into smaller units (Agas, 2013:12).

2.9.2. Outbound Logistics

Outbound logistics refers to goods going out of a distribution centre. Outbound logistics system focuses on how companies get products from the distribution centres to their customers or outlets. Outbound logistics however deals almost exclusively with your end user products.

Having separated the boxes for Pre-Pack and Post stock, the start of outbound logistics begins with splitting the Post stock to On-hold stock and Post location. The On-hold stock is stock that planners and buyers put on hold due to a change of strategy or because it is kept as an advertised order. Post location is where stock is kept until the time that an order is requested for store replenishment. Boxes are assigned to each store where specific store items are stored according to the units required. A wave item system is used to scan the box with which the number of units can be known (Agas 2013:13). Once this process is done, the boxes are then sent through to the couriers to deliver to the stores.

Inbound and outbound logistics system combined in the field of supply chain management, as managers seek to maximize the reliability and efficiency of distribution networks while minimizing transport and storage costs. The understanding of the differences and correlation between inbound and outbound logistics can provide insight for developing a comprehensive supply chain management strategy. A fully integrated supply chain can synchronize both inbound and outbound logistics systems with automatic ordering and order-fulfillment systems, shared fleet vehicles and drivers, and close cooperation between managers at different companies on pricing agreements, volume contracts, delivery terms and even custom product design.

2.10. Factors that influence Distribution Centre Functions

2.10.1. Dwelling Time

According to Bowersox, Closs, Cooper and Bowersox, (2013:24), an important measure of a supply chain productivity is dwelling time. Dwelling time is the ratio period in which a stock remains idle to the time that it is needed to satisfy its required supply chain purpose (Bowersox, Closs, Cooper and Bowersox, 2013:24). As part of the processes at the distribution centre, the Post Pick orders go through a dwelling time stage.

The goods are kept as extra inventory in the distribution centre to be replenished in the store when needed. The distribution centre staff separates Pre-Pack and Post Pick orders and by so doing enables a reduction in dwelling time. Products are allowed a bit of dwelling time at the distribution centre before the cross-docking process takes place. This is so because no stock is kept in the distribution centre once it arrives from the suppliers.

2.10.2. Lead Time

Previously, the decision to buy highly depended on price (Bowersox, Closs and Cooper, 2010; Christopher, 2011). Nowadays, the supplier selection choice relies not only on price but also on the 'cost of waiting time' for the product's arrival and delivery to the customer (Christopher, 2011). Hence, the responsiveness attributed to the product flow is highly considered in a complex environment such as the supply chain. When the product ordering time from the suppliers is not managed well with the customer's order cycle time, it creates a gap called lead time. Thus, great importance is placed when the stock is available at the distribution centre to the time it loaded from the distribution centre. Lead time is the measure of time by which it takes a process to be completed (Mae and Ohno, 2012:38). As already mentioned, the faster the stock leaves the distribution centre, the faster will the company generates sales and make a profit. The process it takes for the stock to be off loaded, checked, verified, allocated and sent to the courier trucks, all sum up the lead time which must be managed effectively to achieve a competitive edge.

2.10.3. Technological Advancements

One of the key areas that contributes significantly to the efficient running of a distribution centre is the technological changes or rather technological advancements. Although technological changes affect capital investment substantially, they allow the facilities to handle the increasing work load by offering better service delivery. Notably, technological advancement increases revenue (Bhandari, 2012: 22). With the use of new technology, not only does productivity increases, customers satisfied, but also the costs of production are reduced and the distribution centre operates optimally. The integration and coordination that exist in a supply chain enable the needs of customers to be achieved and this results into satisfaction.

2.10.3.1. Supply Chain Information Technology

Distribution centres have supply chain technologies introduced in the centres. These systems range from radio frequency identification (RFID), Electronic Point of Sale (EPOS) and Electronic Data

Interchange (EDI). These technologies should be integrated with both physical and information flows so that an updated synchronisation of data can be viewed immediately. Electronic Data Interchange (EDI) is the transfer of information from one computer to the next and the exchange of business information such that information is kept electronically (Nahmias, 2009:348). EDI aims to minimise person to person exchange of information whilst keeping the information at computer to computer exchange of information and thereby reduce mail, fax and email information exchange (Nahmias, 2009:348). The use of people in handling information slows down the process and heightens the possibility of error. Order transmissions are highly dependent on electronic transfer (Bowersox, Closs, Cooper and Bowersox, 2013:52).

Electronic point of sale (EPOS) helps consolidate and share sales data that have passed through the tills in store (Slack, Chambers and Johnston, 2007:426). It shares data that has been logged onto each individual store per item such that a system can generate a replenishment strategy for that store and thus quantify the required units to be sent to the store (Slack, Chambers, Johnston, 2007:426). EPOS can eradicate lead time by advancing orders since information on products appear in real-time in any organizations' database. According to Bowersox, Closs, Cooper and Bowersox, (2013:263) Radio frequency identification (RFID) is a rapidly growing technology that has the prospects of making abundant economic influences on numerous businesses. The implementation of Radio Frequency Identification in supply chain management has the potential of improving effectiveness and efficiencies in the supply chain and distribution system. Wamba, Lefebvre, Bendavid and Lefebvre (2008:620) highlight that RFID technology can manage inventory accurately in real time and this can result in the reduction of time and labour wastages. Using RFID capabilities opens the opportunity for a bi-communication between certain products and lift truck operators. The product visibility of all the inventory data at both distribution centres, in transit and at the retail stores is also improved by this technology. RFID technology assists in a wide range of areas such as hospitals and patients, retailers and customers, manufacturers and distributors throughout the supply chain efficiencies (Sabbaghi, 2008:73).

Sabbaghi (2008:74) mentions that the future success of RFID will be strongly affected by the ability of businesses to offer the right products and services to consumers. Every business needs to have a thorough outlook and focus on the criticality of technology to success and growth. RFID technologies support a wide range of applications, from asset management and tracking of

products to manufactured products and related customer services and to access controls and automated payments (Li, Yang, Sun and Sohal, 2009:128). Depending on the application in the industry and the enterprise within the industry, the RFID system can be very complex and its implementations may vary greatly (Sabbaghi, 2007:78). RFID assists in providing real time information, inventory visibility, stock out reduction and continual update of in-store stock levels (Thiesse and Fleisch, 2008:604).

2.11. Conclusion

This chapter has successfully given insights into the distribution centre and the complexities that are attendant to it. A good supply chain must endeavor to keep its customers in mind in whatever decision it makes. Ensuring that customers are satisfied becomes a focal point for organisations towards increasing loyalty and ultimately achieve competitive advantage. Keeping abreast with technology allows organisations to design and attain organisation wide improvement. Thus, extending knowledge of technological advancement process enforces value creation, good communication and collaboration among the supply chain partners thereby increasing business model strategy.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1.   Introduction

From the previous chapter, a literature review was presented. This chapter, provides an overview of the research methodology employed, the data collection technique and the data analysis that was used to attain the study objectives. Thus, it discusses the research design, study site, target population, sampling, sample size and the ethical considerations. An explanation on how the researcher embarked on the study is also discussed.

3.2   Research Design

According to Hair, Celsi, Money, Samouel, and Page (2011:146) a research design gives the primary directions on how to embark on a research project. A research design is also an outline on how the envisaged full study can be completed. As described by Babbie, Mouton, Vorster and Prozesky (2007:74), a research design is a plan or blueprint which spells out how one proposes to carry out the research in question. Thus, a research design concentrates on the end product in terms of the kind of study one embarks upon and the outcome aimed to achieve. In this study, therefore, a descriptive research design was employed. Hair, Celsi, Money, Samouel, and Page, (2011:147) assert that characteristically, descriptive research describes a stat and this is accomplished by employing descriptive statistics such as frequency counts or measures of dispersions. To this end, associations between variables in descriptive statistics are assessed using statistical tests. Additionally, it is argued that descriptive research is considered and used to obtain data that designates the traits of the study interest topic (Hair, Celsi, Money, Samouel, and Page, 2011:149).

3.3   Research Approach

This study adopted the quantitative research approach. This type of research paradigm focuses on data collection in numerical form to be analysed quantitatively (Bless, Higson-Smith, Sithole, 2013:16). Quantitative research comprises of respondents' perceptions which are coded, categorized and reduced to numbers that can be manipulated through statistical analysis (Cooper and Schindler, 2012). The outcomes from the use of quantitative research are factual since the researcher uses statistical and mathematical models to generate the results envisaged (Castellan, 2010:15). The design is usually arranged systematically to maintain consistency across varied

contexts, hence its generalisability attribute. This means that the outcomes from using a quantitative research design can be used to make predictions about a phenomenon of interest using statistical or mathematical modelling (Sekaran and Bougie, 2013:382).

3.4. Sampling Design and Sampling Technique

Sampling design is the practice of selecting samples that represent the larger population from which it is selected (Sekaran and Bougie, 2011:267). There are two types of selection methods: probability and non-probability sampling. This study employed the use of non-probability sampling. Hair, Celsi, Money, Samouel, and Page (2011:174) highlight that in non-probability sampling, the elements selected are not essentially based on the requirement that they be statistically representative of the population. But the researcher uses subjective techniques such as convenience, judgement and personal knowledge or experience to select the sample elements. As a result, the probability of selecting any element of the population is not known. Judgemental or purposive sampling was used in this study. In this sampling technique, each element in the target population is selected for a specific purpose. This is mostly dependent on the researchers' judgement since the researcher believes that he/ she represents the target population although he or she is not necessarily representative (Hair, Celsi, Money, Samouel, and Page, 2011:175). Babbie, Mouton, Vorster, Prozesky, (2007:167) highlight the advantages of purposive sampling as being the question of convenience and cost effective. Hence, in this study, the researcher drew from his experience to select the sample among members from the staff of Mr Price, and these were the respondents that could provide the actual response to the questions.

3.5 Study Site

Notably, a study site is the actual environment the study can be carried out (Simons, 2009:89). In this context, the study took place in Durban, KwaZulu-Natal, at both the head office in the Durban CBD and the Distribution Centre in River Horse North, Durban.

3.6 Target Population

The target population comprised all the elements identified as part of the group that were be studied. The population consisted of the distribution centre and head office employees with an approximate total of four hundred (400) people. This includes logistics managers (out-bound and

in-bound), distribution centre operators, supply chain and shipping staff, store managers, logistics coordinators, Out-bound and in-bound logistics supervisors, shipping coordinator's, truck drivers and systems engineers.

3.7   Sample Size

McCrum-Gardner (2010:10) defines sample size as "a function that consists of three factors - the significant level, the effect size and the power". A sample size makes suggestions about a population from the sample. A sample is expected to be as large as possible for generalisability. According to Sekaran and Bougie' (2011:295) table, the population size of four hundred (400) corresponds to a sample size of one hundred and forty-eight (148).

3.8   Data Collection Method and Instruments

In this study, a personally administered questionnaire was employed. This type of questionnaire has the advantages of clarifying doubts where necessary and is designed with an almost 100% response rate. Notably, a high level of privacy among the respondents was noted since the design of the questionnaire is usually clear and simple. However, the disadvantage might be that some proposed respondent may not want to sacrifice work time to complete such a questionnaire. As such, this can turn out to be a costly venture especially when the sample location is geographically dispersed (Sekaran and Bougie, 2011:217).

3.8.1   Questionnaire Distribution

The questionnaire was titled "Supply chain distribution system towards African marketplace: a case of Mr Price". It consisted of two sections (A and B) designed from the literature reviewed. Section A entails the respondents to give their background information. In that same section, a question with the dichotomous response "Yes" or "No" was included. Section B of the questionnaire comprises 5-point Likert scale questions. The respondents were asked to indicate their level of agreement or disagreement with each statement in a scale that ranges from: "1" as strongly disagree, "2" as disagree, "3" as neutral (neither agree nor disagree), "4" as agree and "5" as strongly agree. This same section A, involves some questions on the selection the best country that can service Africa, selection of best answers that can make a distribution centre effective, the

downfalls of a distribution centre and to select some importance of some attributes to a distribution centre.

The various ways to administer a questionnaire is depicted in the diagram below. This includes, seeking permission to distribute questionnaires at Mr Price Group and individually approaching potential respondents in the offices to complete the questionnaire. A three-week timeframe was given so that the respondents could respond to the questionnaire then a follow-up and collection of the completed questionnaires was done. A total of one hundred and forty-eight (148) questionnaire were circulated and one hundred (100) responses were received thus representing 68% return rate.

Figure 3.1   Data Collection Process

CONTACT CALL
Permission to distribute questionnaires granted

MEETING RESPONDENT
Respondent were informed of confidentiality agreement
The aim of the study was stated

QUESTIONNAIRE DISTRIBUTION
Individual respondents were approached and given the questionnaire

FOLLOW UP PROCESS AND COLLECTION
Most Respondents completed the questionnaire in due time while others scanned and sent electronically and some others were given a three week period before the questionnaire was collected.

Source: Diagram designed by the researcher

3.8.2   Ethical Considerations

Ethics refers to a set of widely accepted moral principles suggested by an individual or group. These moral principles offer rules and behavioural expectations regarding the correct conduct in conducting experimental research involving respondents (Fauka and Mantzorou, 2011:4). Although ethical procedures are generally important for any research process, conducting a university research has formalised rules and regulations. These rules and regulations are put in place to protect the respondents and thus subject the researcher to the research process. Hence, the researcher kept the names of the participating respondents within the parameters of confidentiality. Upon acceptance of the research proposal, the researcher secured a gatekeepers' letter from Mr Price Group stating that a study would be conducted at the site. After receiving the gatekeepers' letter, the research applied for the ethical clearance letter from the University research committee that approved the ethical clearance. The process for ethical clearance consideration began with the submission of the research proposal outlining the parameters to be measured in the envisaged study, the questionnaire and the gatekeepers' letter. Upon approval, the researcher also submitted a request to Mr Price Group to collect the required data from the employees of the company. The logistics' director of Mr Price Group signed the ethical letter. Additionally, all the would-be participants also signed the consent form. To this end, the researcher informed the respondents of their voluntary participation and withdrawal without any consequence having to be suffered by them in the event of them withdrawing from participation.

3.9.   Data Analysis

The completed questionnaires were processed using the statistical software, the Statistical Package for the Social Sciences (SPSS®) in combination with Microsoft Excel's abilities of analysing and processing data. Univariate analysis such as central tendency and measure of dispersion was used to calculate the mean, mode, median, standard deviation and variance to examine each variable from the instrument. Bivariate analysis was used to test the hypothesis of two related variable means. Cross tabulation was used to test the relationship among the variables in the study. Multivariate analyses were used to test the relationship between the dependent variable and two or more independent variables.

3.10   Univariate Analysis

According to Vogt and Johnson (2011:411), univariate analysis comprises the study of cases of the in chapter four of the study. It is rarely used in regression analysis. Thus, the analysis was done using the data collected from the respondents.

3.10.1 Frequency Distribution

Frequency distribution depicts the total number of respondents that participated in the study and the percentage that sums up each category of the question.

Diagrams: To display the quantitative data collected, histograms, pie charts, tables and bar charts were used in presenting the data. Generally, this permits ease in the collated information interpretation. According to Cooper and Schindler (2008) bar charts, histograms, tables and pie chart are employed in analysing nominal or ordinal variables. All the contents of the questionnaires were analysed using the Frequency distribution strategy or technique.

3.10.2 Descriptive Statistics

According to Babbie, Mouton, Vorster and Prozesky, (2007:459), descriptive statistics is a technique of presenting quantitative data in a manageable form. It can also be described as "the procedure for summarising, organizing, graphing and describing quantitative data". It can also show where the data distribution is located (Vogt and Johnson, 2011:104).   For this study, descriptive statistics was used to describe the analysed data features in terms of dispersion and central tendency.

Central Tendency: this is used to summarise and reduce information for better understanding. It helps in locating a distribution centre with other useful information (Cooper and Schindler, 2008:448). The measures of central tendency include the mean, mode and median.

    I.   The mean is the arithmetic average value. It can be used when the measured data is either an interval or ratio scale. If there exists extreme values, the outcomes of the analysed data can be distorted by the mean.

    II.   The mode indicates the most frequently occurring value in the sample distribution. It also depicts the highest peak in the graphical distribution (Hair, Celsi, Money, Samouel, and Page, 2011: 198).

III. The median shows the central item in the data set (Sekaran and Bougie, 2011:316). It measures the central tendency. The three measures can be likened to specify the skewness of the distribution and the measures must achieve the following:

When

   I.   Mean > Median > Mode, distribution is skewed to the right

  II.   Mean < Median < Mode, distribution is skewed to the left

 III.   Mean = Median = Mode, distribution is symmetric

The frequency of the separate values is usually identified when establishing the data distribution using a frequency histogram. Lastly, dispersion shows the variability that exists in a set of observations. Descriptive statistics was used to assess the variables in section B of the questionnaire. The outcomes were evaluated against the bivariate and multivariate data analysis. Additionally, a one sample t-test was done to test whether the average response for each question is significantly different from a neutral score of '3'. Thus, if significance is shown, then there is agreement if mean > 3 and disagreement if mean < 3.

3.11 Bivariate Data Analysis

Two variables are recognized using bivariate analysis. According to Creswell (2014:165), bivariate analysis concerns itself with the association amongst two variables. It consists of many statistical techniques that relate to difference levels of measurement.

Correlation: Correlation analysis was used to investigate the degree and direction of the linear association amongst two variables or more variables (Pallant, 2011:121).

3.11.1 Cross Tabulation and Chi-Square

Cross tabulation is the use of data that are organised from the categorical variables in a matrix so that the association can be viewed clearly (Vogt and Johnson, 2011:87). It permits the use of tables which comprises of rows and columns that relate to some coded values for the variables to establish an association amongst them.

3.12. Factor Analysis

According to Graham (2010:40), factor analysis is described as "a statistical technique used to categorize sets of variables". It is a means to create a structure of the hidden variables in a data

set. Thus, factor analysis is used to understand the insights elicited from the questionnaire and thus reduces the data volume while retaining the important characteristics. Each factor comprises of the variables grouped together in the data set wherein each variable is assigned to a factor loading constant. This describes the significance of that variable to the composition of the factor.

3.13. Multiple Regression

Multiple regression is a statistical tool to predict a variable's score based on other variables' scores. It is an extension of the bivariate linear regression model, the only difference being that multiple regression uses three or more variables (Cooper and Schindler, 2008:46).

A multiple regression model was used to understand the relationship between the different variables. Multiple regression "tells you how much of the variance in your dependent variable can be explained by your independent variables. Multiple regression is used when exploring linear relationships between the predictor and criterion variable. Multiple regression requires a large number of observations. The number of participants should substantially exceed the number of predictor variables used for regression (Johnson, 2009:375).

3.14. Data Quality Issues

Reliability and validity are used to determine the credibility of a study. Validity focuses on the degree to which the study is considered plausibly sound and if it was performed in an appropriate manner. Reliability and validity assess the approach employed to gather data and the degree to which the data are accurate and credible.

3.14.1 Reliability

Reliability is the characteristic of measurement that gives an emphasis to the accuracy, precision and consistency of the data and information used for the study; it is a key concept in trustworthiness (Cooper and Schindler, 2008:352). Reliability means that the responses that the respondents have answered can be tested and used as a source of information that will not cause problems for the researcher and the topic being researched. Respondents in being reliable in terms of their knowledge shared and the manner in which questions are answered, if the subject of study does not change, it can be assumed that the results would be the same from one measurement to the next (Seale 2004:72). According to Sarantakos (2005:432); and LoBiondo-Wood and Haber

(2006:345), reliability measures objectivity, dependability of data, precision, consistency, and the stability of data.

3.14.2 Validity

Validity is the degree to which a research instrument is seen to be achieving objectives set out by the researcher for the study (McDaniel and Roger, 2010:316). Validity has a link to reliability but is of its own capacity, validity also requires the ability to be tested and contribute to the benefit of the research being made. Validity refers to the question of, if the instrument measures used will be able and respond adequately to what it was initially supposed to measure, such as, was the researcher able to sink deep into the respondent and gained full access to knowledge.

There are various forms of validity: Face validity which is, "is the systematic assessment of how well a construct's measurable components represent the construct" (Hair, Bush and Ortinau, 2009:337; McDaniel and Roger, 2010:253). Face validity is the weakest form of validity (McDaniel and Roger, 2010:253). Construct Validity "is the degree to which a measurement instrument represents and logically connects, via the underlying theory and the observed phenomenon to the construct" (Hair, Bush and Ortinau, 2009; McDaniel and Roger, 2010:320). Construct validity deals with what the researcher is trying to really measure and it uses theory in order to formulate a construct to be measured (McDaniel and Roger, 2010:256).

The validity and reliability of the measures provide support for the quality of the data.

3.15. Conclusion

This chapter provided an overview of the research methodology used. The crux of this chapter three was to discuss the research design and methodology used in this study. The techniques used for data collection were v discussed as well as the sampling methods that were employed in selecting the respondents to participate in the research study. Lastly, the statistical methods used to analyse the collected data were discussed. The following chapter, therefore, focuses on the data analysis of information collected from the research instrument.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.1   Introduction

This chapter renders an explication of the data analysis from the instrument on which the questions were collated. This study engages the univariate, bivariate and multivariate data statistics analysis to determine the supply chain distribution system towards African Marketplace: A case of Mr Price. The responses identified from the survey used in the data collection were analysed using tables, figures and graphs. By using statistical applications, human errors in the execution of the study was minimised.

4.2   Univariate Analysis

4.2.1   Frequency Distribution

The frequency distribution graphs are presented on all the respondents' background information. The analyzed results were from one hundred (100) respondents only. The graphical representation below depicts the gender, age, ethnic affiliation, number of years in the retail industry and occupational level of all the respondents.

Figure 4.1.   Gender
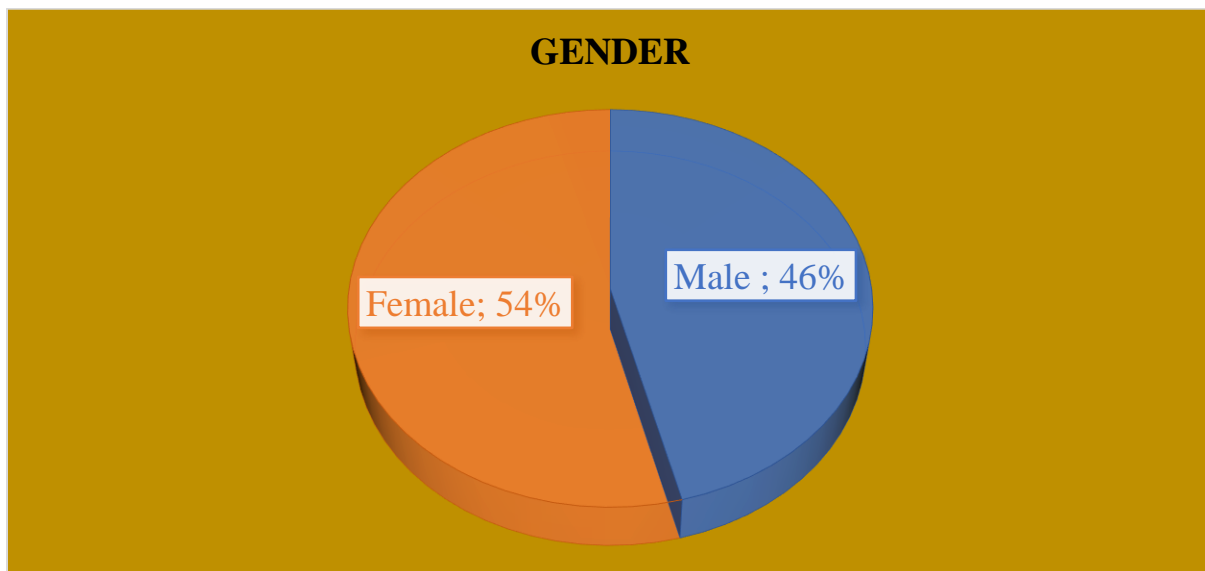
It can be gleaned from Figure 4.1 that fifty- four (54%) of the respondents are females while forty-six (46%) of the male respondents were males. This diagram validates the fact that females are more represented in the population data more than their male counterparts.

Figure 4.2.   Age
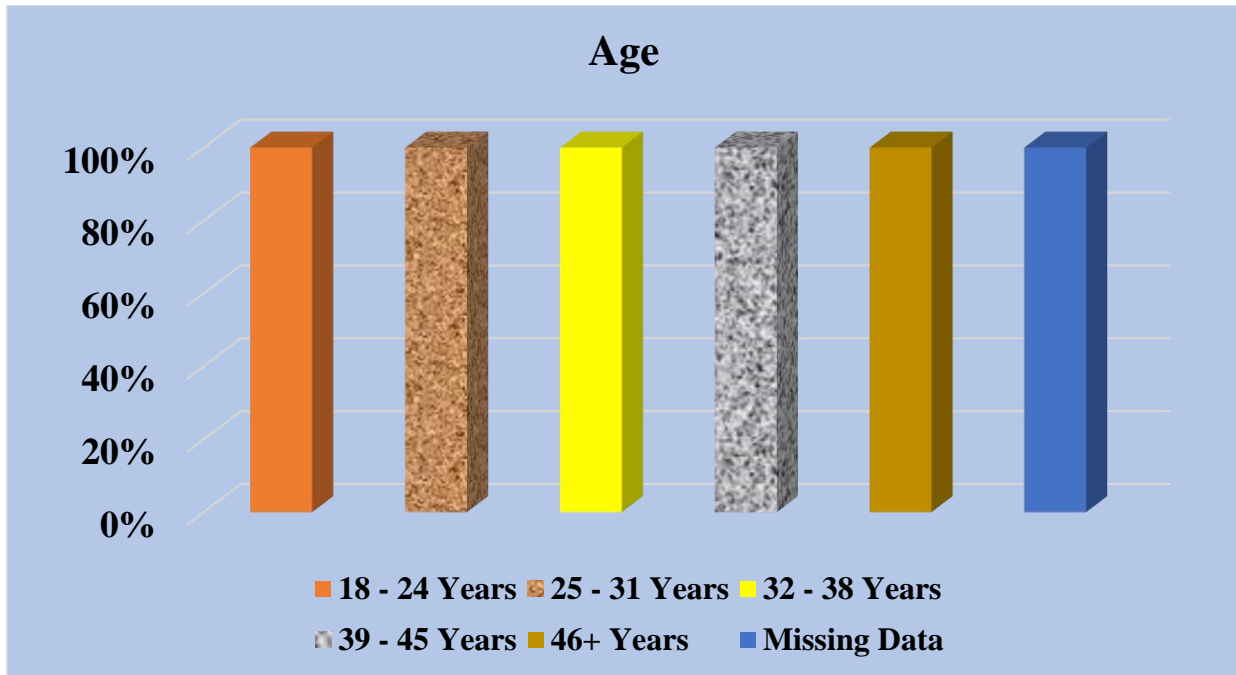
Table 4.1.   Description of the Age Group

Age Group	Percentage
18 – 24 Years	16%
25 – 31 Years	49%
32 – 38 Years	23%
39 – 45 Years	6%
46+ Years	2%
Missing Data	4%

Table 4.1 above is a visual representation of the data percentages attributed to the varied age groups. The highest age groups from the table above that relates to the respondents were between the ages of (25 – 31) with forty- nine (49%) response rate, the next group of the respondents' age lies between 32 and 38years with a twenty-three (23%) response rate followed by a sixteen (16%) response rate from the age group of between 18 and 24years. Sixteen (16%) of the respondents' age lies between 18 and24years and about four (4%) of the respondents' data was missing. This might be accounted for by the fact that most people do not wish their age to be known by others. The lowest age group lies between 46+ years with a response rate of just two percent (2%).

Figure 4.3. Ethnicity
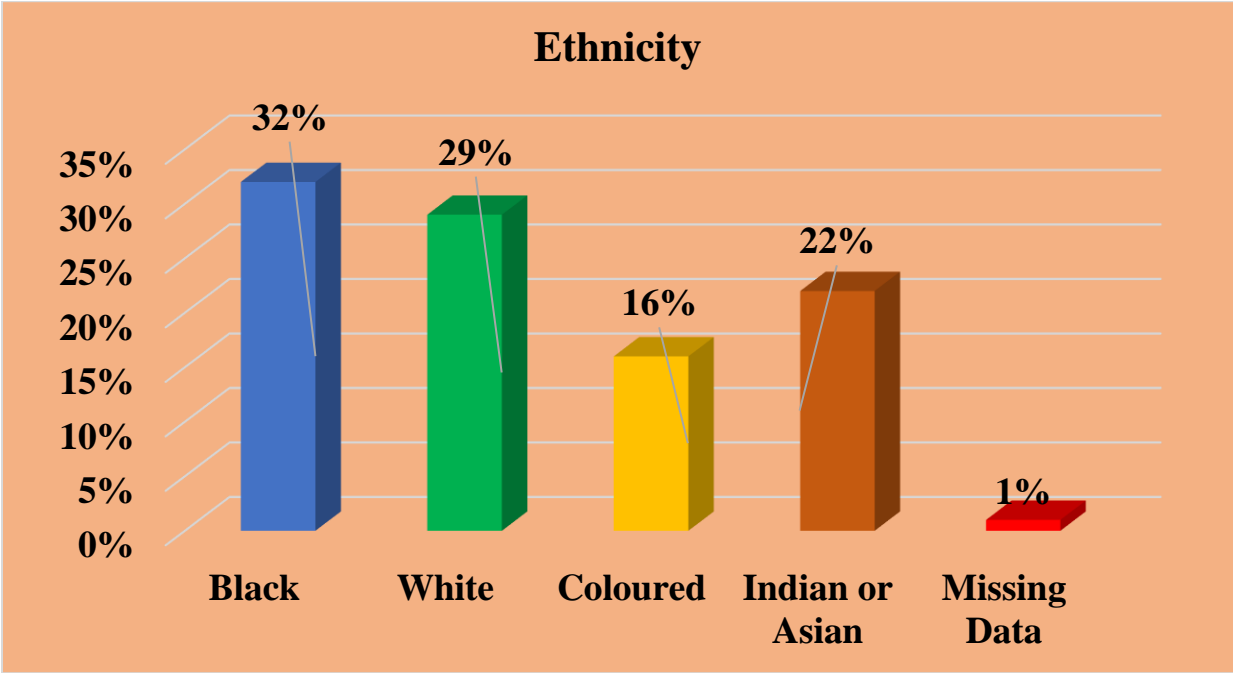
The graph in the picture above depicts the different race groups to which the respondents belong and shows the percentage rate of each race that responded to the survey. The highest represented respondents in this survey are the blacks with thirty-two percent (32%) response rate, the white race group followed with twenty-nine percent (29%) response rate. The Indian or Asian race group has about twenty-two percent (22%) response rate while the coloured race group has only sixteen percent (16%) response rate. One (1%) of the respondents has data missing for this category.

Figure 4.4. Number of Years in the Retail Industry
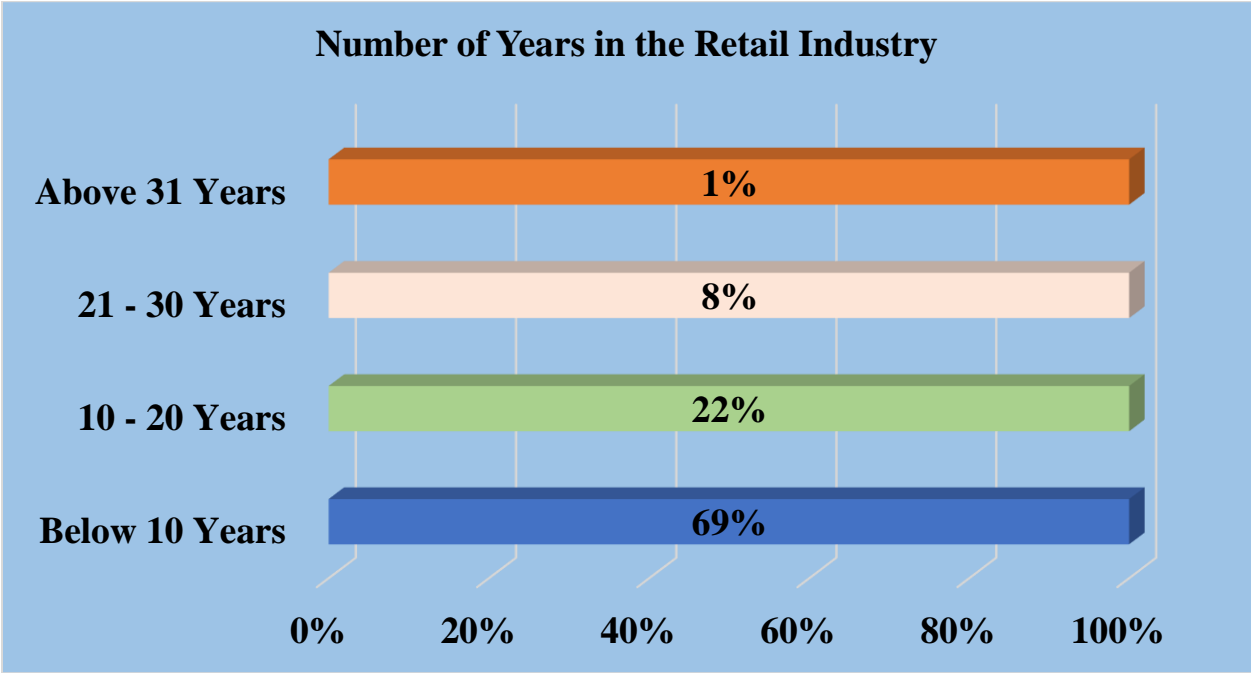
From figure 4.4 above, the number of years that most of the respondents (69%) have worked in the retail industry is below 10 years. Twenty-two (22%) of the respondents have been in the retail industry between 10 and 22 Years while eight percent (8%) response rate was recorded to have worked in the retail industry between 21 and 30 Years. Only one (1%) of the respondents has been in the retail industry for more than 31 years.

Figure 4.5.   Occupational Level
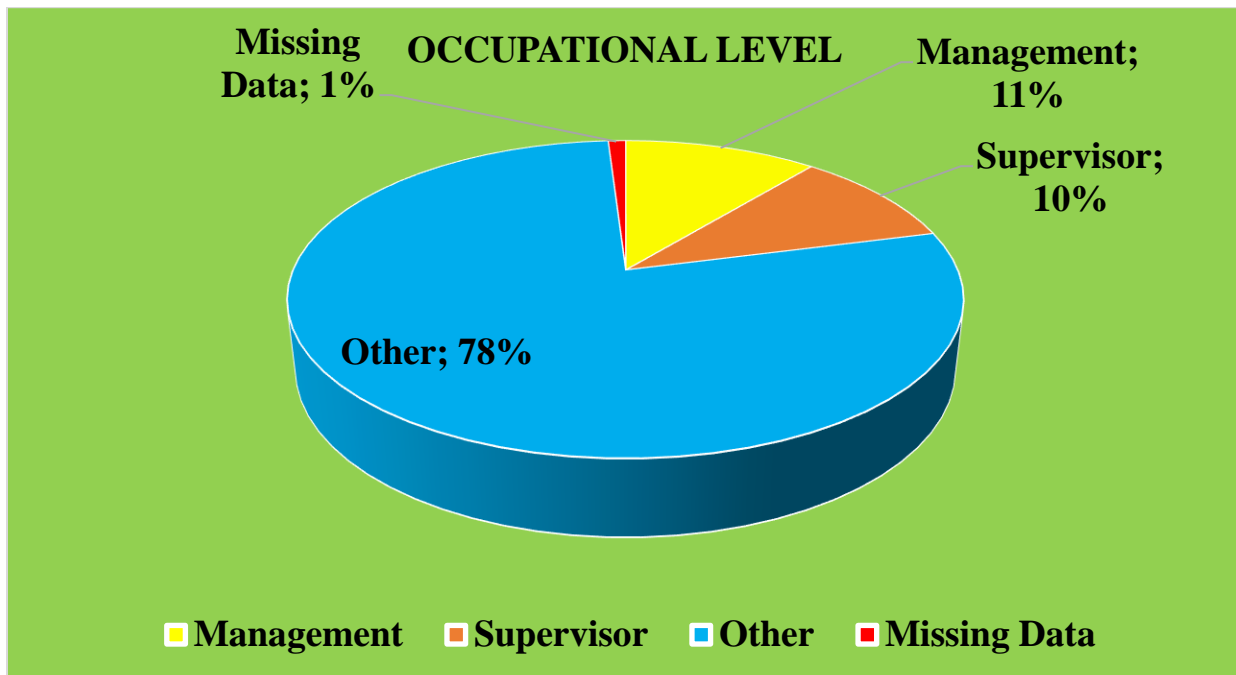
The graph depicted in figure 4.5 above illustrates the level of occupation of each respondent to the survey. Seventy-eight percent (78%) of the total respondents belong to the group named "other" which may comprise of all the lower level staff (non-management staff, trainees) of Mr Price firm. Eleven (11%) of the respondents belong to the management level while ten (10%) of the respondents are supervisors of the retail outlet. A one percent (1%) response rate was identified and it can only be speculated that this unidentified respondent is not employed by Mr Price.

Figure 4.6.   Staff Currently Working at Mr Price Group
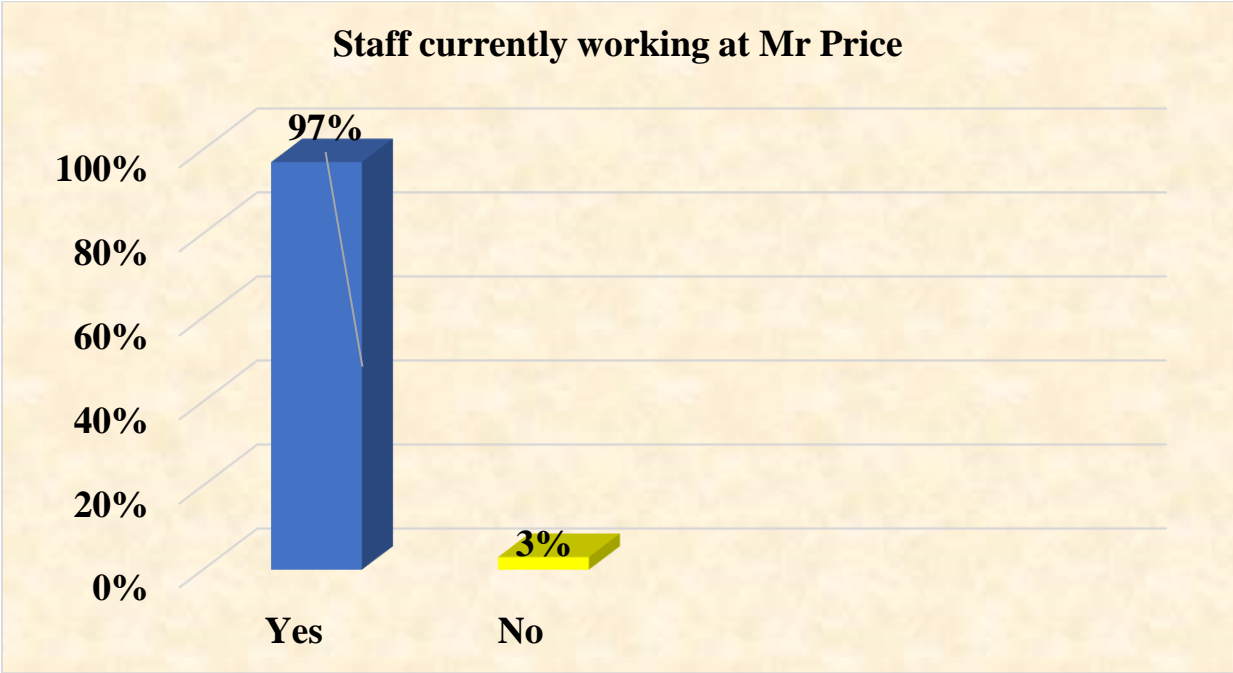
The graph above indicates that ninety-seven (97%) of the respondents are currently working at Mr Price firm and only three (3%) of them stated that they are not working at the firm.

Figure 4.7.   Duration of Employment at Mr Price Group
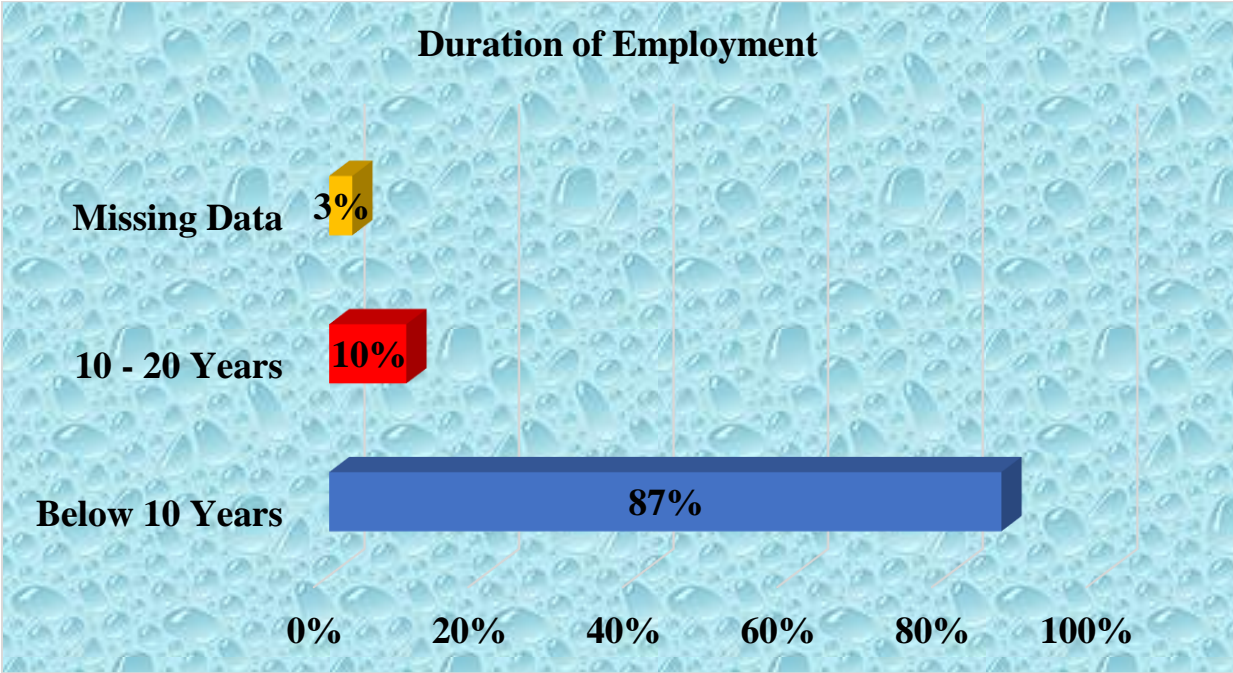
In discussing the duration of employment at Mr Price Group, it should be noted that the highest respondents are staff that have worked below 10 years and they constitute eighty-seven percent (87%). Ten (10%) of the respondents have worked at Mr Price Group between 10 and 20 years and there is a missing data response rate of just three percent (3%). This relates to figure 4.6 wherein three percent (3%) of the respondents are not currently working at Mr Price Group. From the survey instrument and the respondents' data, it can be gleaned that no one has worked at Mr Price Group more than thirty-one years. Hence, no data was represented for such a work force on the graph.

Figure 4.8.   Level of Work Conditions at Mr Price Group
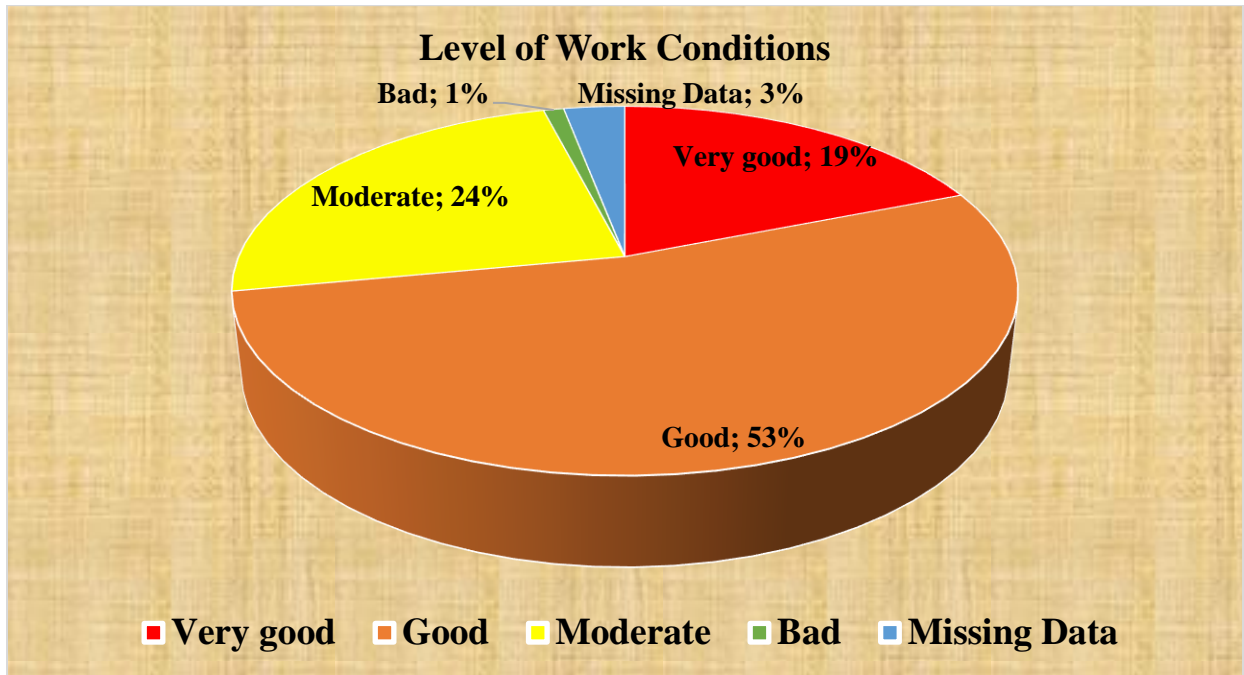
From figure 4.8, it is noted that fifty-three (53%) of the respondents concurred that the work conditions at Mr Price group are good while twenty-four (24%) of the respondents agreed that the work conditions are moderate. Nineteen (19%) of the respondents are of the view that the work conditions are very good and only one (1%) of the respondents is of the view that the work conditions are bad. There is, arguably, three (3%) of the data missing from what is represented in figures (4.7 and 4.6) above. As already indicated, the unidentified percentage of the respondents can be accounted by the fact that they might not be employees of Mr Price.

Figure 4.9   Current Situation of Mr Price Group (Need for Distribution Centre)
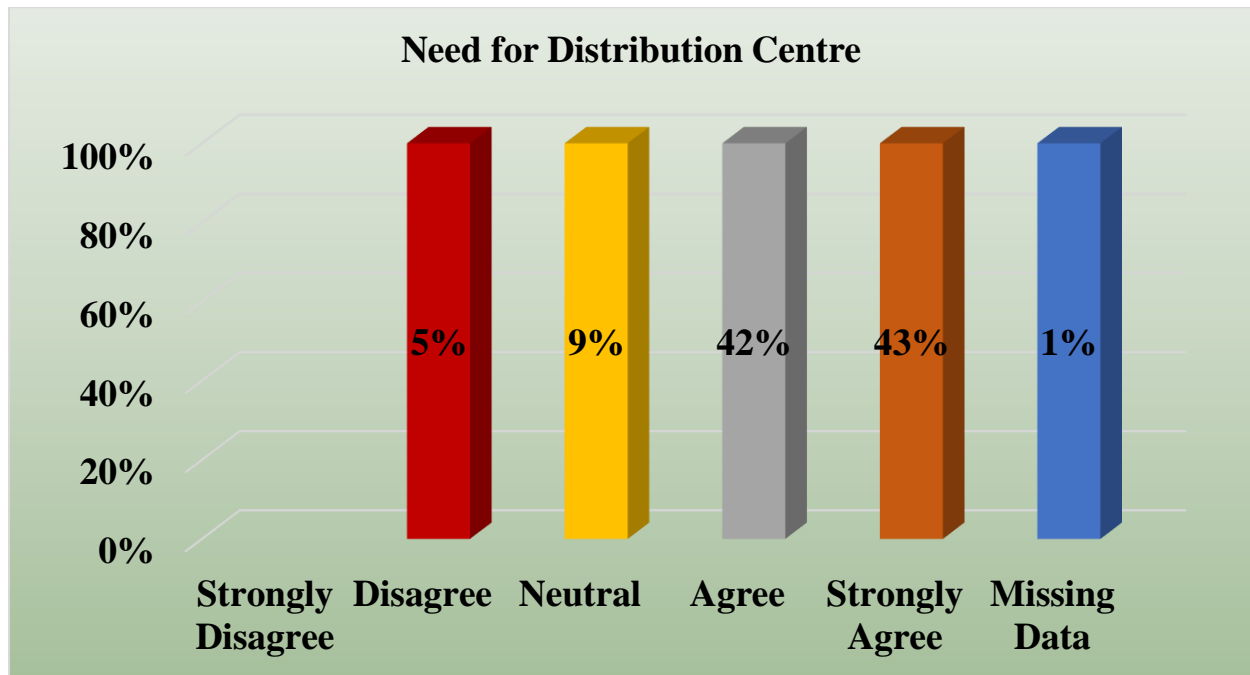
From figure 4.9 above, a high response rate of forty-three (43%) is recorded against the variable strongly agree. This means that these respondents believed strongly that there is a need for a distribution centre in Africa for the firm Mr Price Group. Forty-two (42%) of the respondents also supported the need for a distribution centre. Nine (9%) of the respondents were neutral about this and five (5%) disagreed that there is need for a distribution centre in Africa. Some (1%) missing data is noted and no one among the respondents strongly disagreed on the need for a distribution centre in Africa.

Figure 4.10   Skills in Distribution Centre

Skills in Distribution Centre

Category	Percentage
Missing Data	1%
Strongly Agree	10%
Agree	52%
Neutral	26%
Disagree	10%
Strongly Disagree	1%
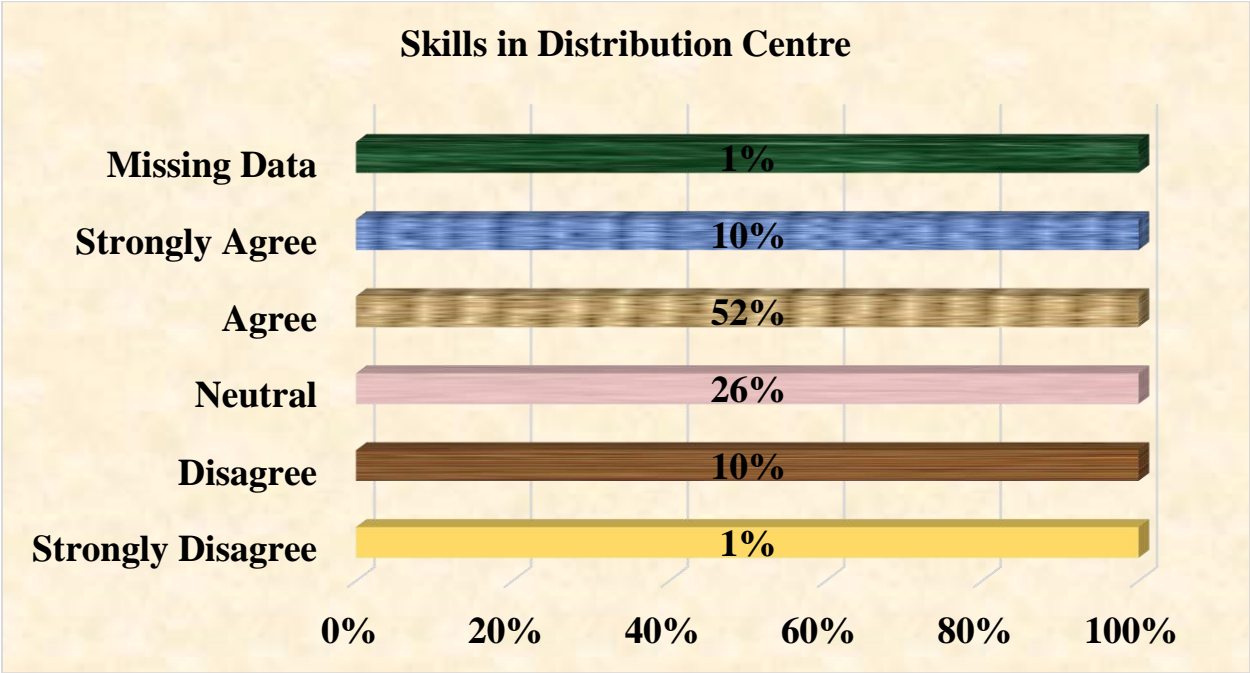
In figure 4.10 above, the data collected from the respondents on whether the necessary skills are currently available in the distribution centre shows that fifty-two (52%) of the respondents agreed, twenty-six (26%) of the respondents were neutral, ten (10%) of the respondents disagreed that necessary skills are represented in the distribution centre. Some (10%) responses were received from the respondents that strongly agreed that there are available skills at the distribution centre while one (1%) strongly disagreed to this. Some responses (1%) are taken as missing data.

Figure 4.11   Merchandise Team Planning Skills
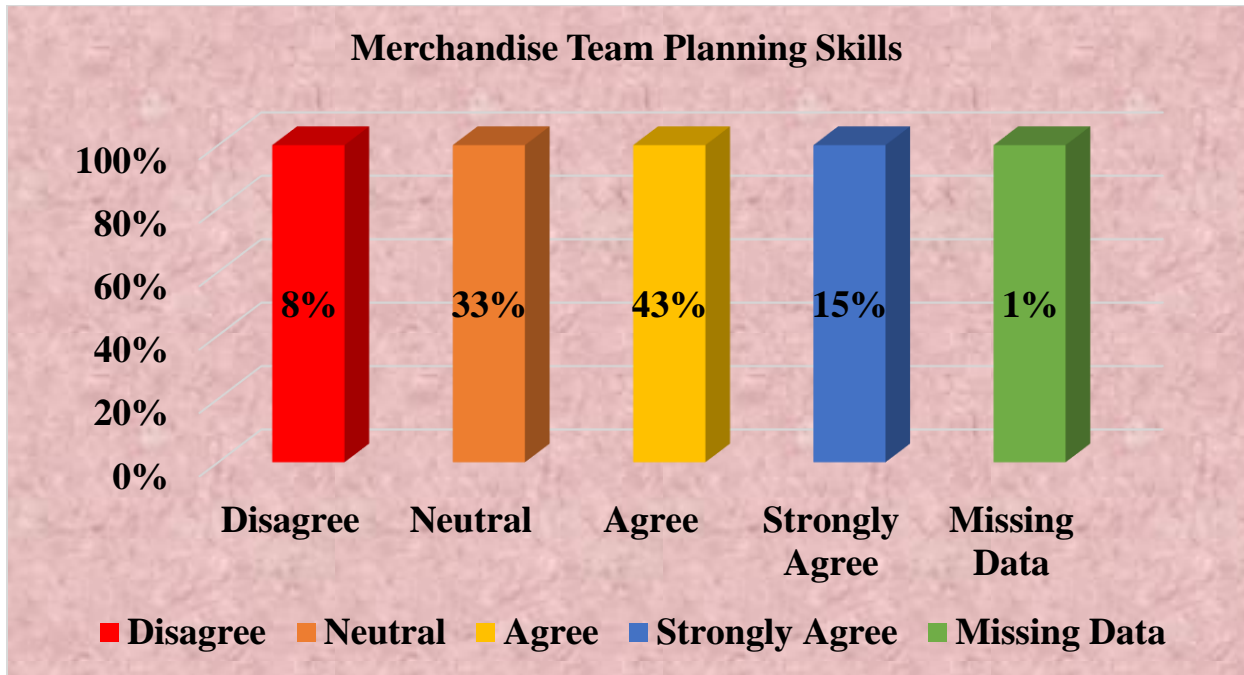
The graph in figure 4.11 above, indicates the merchandise team planning skills pertaining to Mr Price Group. Forty-three percent (43%) of the respondents agreed that the merchandise team will be able to plan for an international distribution centre, thirty-three percent (33%) of the respondents remains neutral on this. A fifteen percent (15%) response rate has been given by the respondents who strongly agree that the planning can be made possible by the merchandise team and eight percent (8%) of the respondents disagrees while some one percent (1%) data is missing.

Figure 4.12   Pressure Reduction from the Introduction of Distribution Centre

Pressure Reduction from Introduction of Distribution Centre

- Missing Data: 1%
- Strongly Agree: 32%
- Agree: 50%
- Neutral: 12%
- Disagree: 5%

Legend: Disagree, Neutral, Agree, Strongly Agree, Missing Data
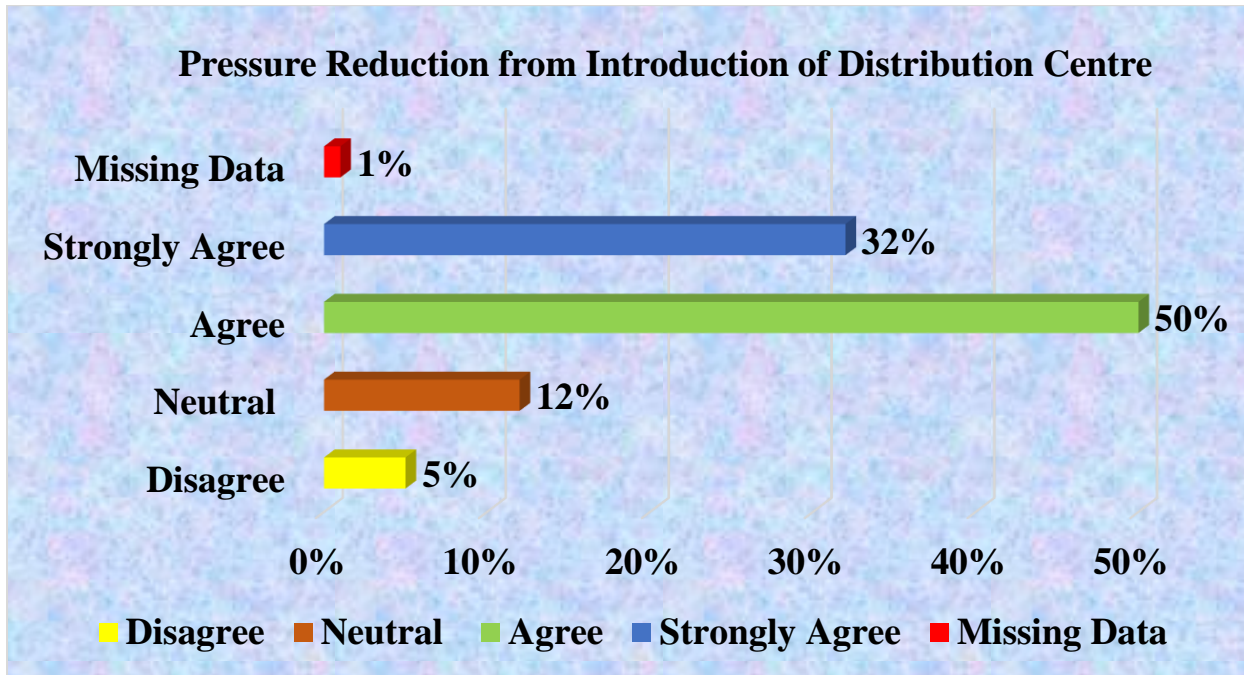
From figure 4.12, fifty (50%) of the respondents agreed that the introduction of distribution centres in Africa will reduce pressure on the local distribution centre. Thirty-two (32%) of the respondents strongly agreed with the statement while twelve percent (12%) of the respondents remained neutral. Only five percent (5%) of the respondents disagreed that introducing a distribution centre in Africa will reduce pressure on the local one. Some one percent (1%) missing data is observable in the graph.

Figure 4.13   Current Distribution Centre
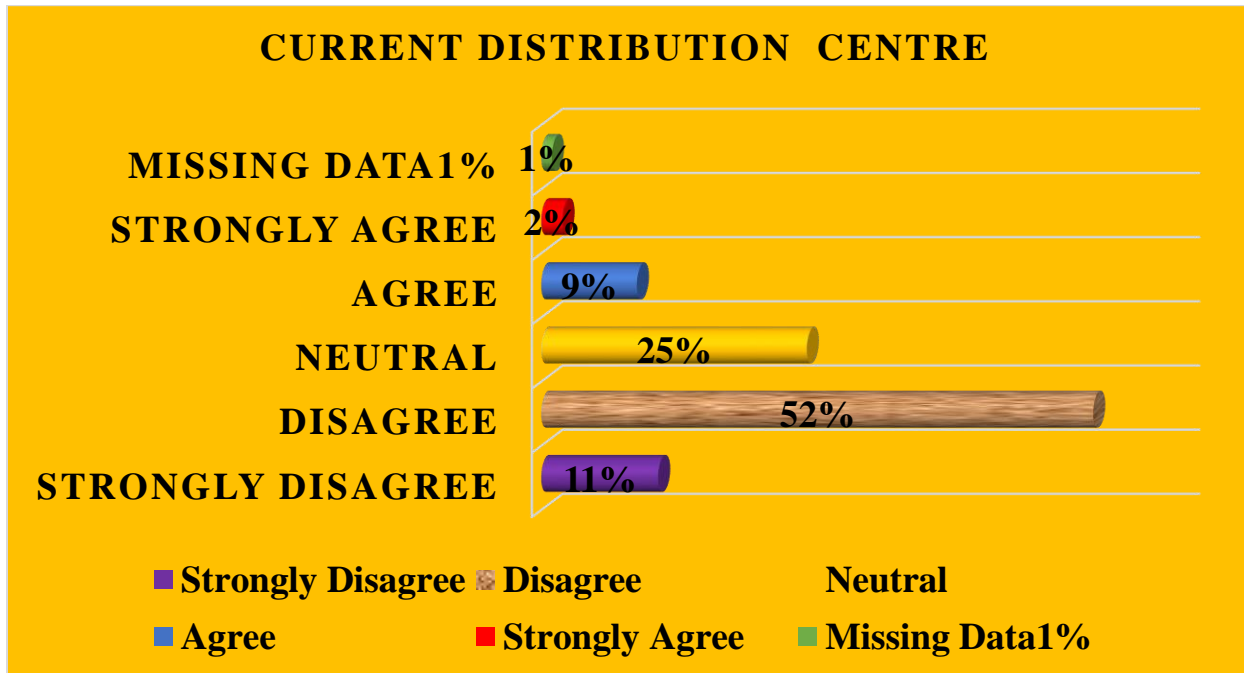
From figure 4.13 above, fifty-two percent (52%) of the respondents disagreed that the current distribution system should not remain as it is while twenty-five percent (25%) of the respondents were neutral concerning their views in this regard. Eleven percent (11%) response rate was noted from the respondents who strongly disagreed that the current distribution centre should remain as it is and nine percent (9%) of the respondents agreed that the current distribution should remain the way it is. Two percent (2%) of the respondents strongly agreed to the statement but some one percent (1%) missing data is noted in the graph distribution.

Figure 4.14   Current Distribution Centre Delay
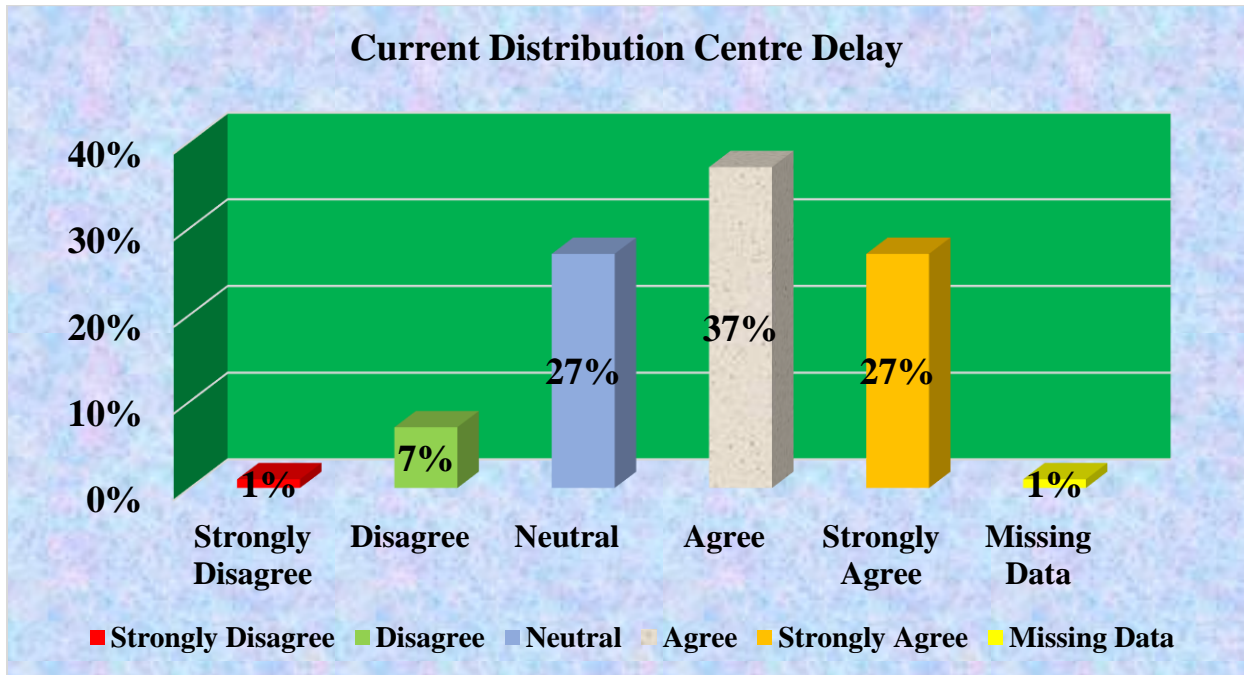
From figure 4.14 above, thirty-seven percent (37%) of the respondents agreed that the current distribution system delays the delivery of products from reaching Africa while twenty-seven percent (27%) of the respondents were respectively neutral concerning their views and others strongly agreed that the current distribution system delays product delivery to Africa. Seven percent (7%) of the responses was noted from the respondents who disagreed that the current distribution centre delays products from getting to Africa and one percent (1%) strongly disagreed with the statement but some one percent (1%) missing data is noted in the graph distribution.

Figure 4.15   Product Availability Satisfaction
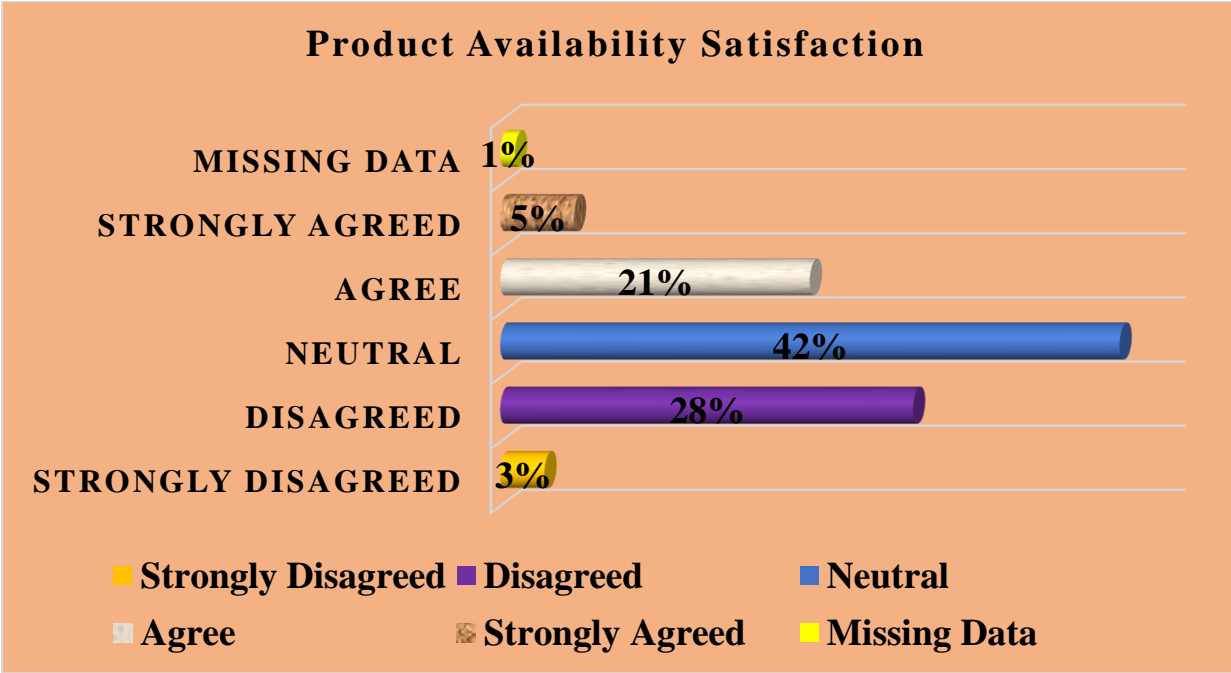
From figure 4.15, forty-two percent (42%) of the respondents remain neutral on their views pertaining African customers satisfaction with the current product availability. Twenty-eight percent (28%) of the respondents disagreed that African customers are satisfied with the current product availability while twenty-one percent (21%) agreed with the statement. Only five percent (5%) of the respondents strongly agreed that African customers are satisfied with the current product availability but three percent (3%) of the respondents strongly disagreed and some one percent (1%) missing data can be observed in the graph.

Figure 4.16   Country that best serve Africa
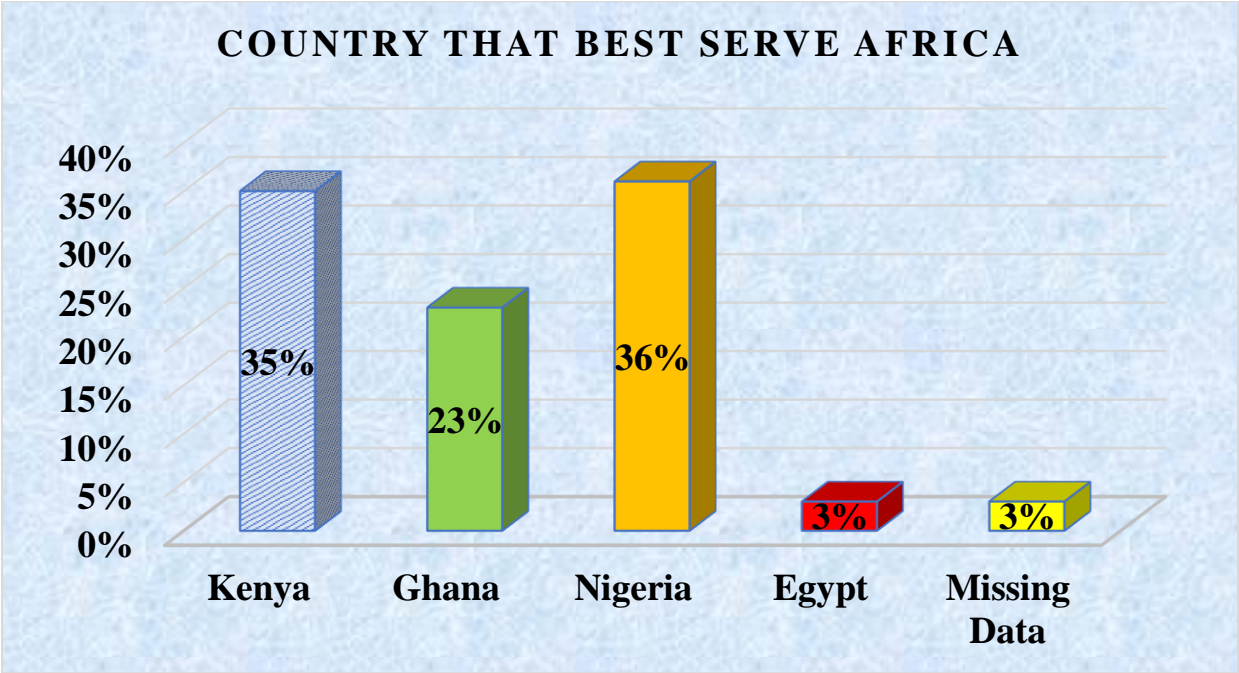
In the figure above, the respondents were asked to select the country that would serve Africa best and the highest response with a rate of thirty-six percent (36%) suggested Nigeria. The second highest country that would serve Africa best was Kenya with a response rate of thirty- five percent (35%) while the third highest selected country with a response rate of twenty-three percent (23%) was Ghana. Egypt is the last country that the respondents chose to serve Africa best, with a response rate of three percent (3%). Some missing data is observed from the graph with a three-response rate of three percent (3%).

Figure 4.17   Attributes that support Efficiency of Distribution Centre
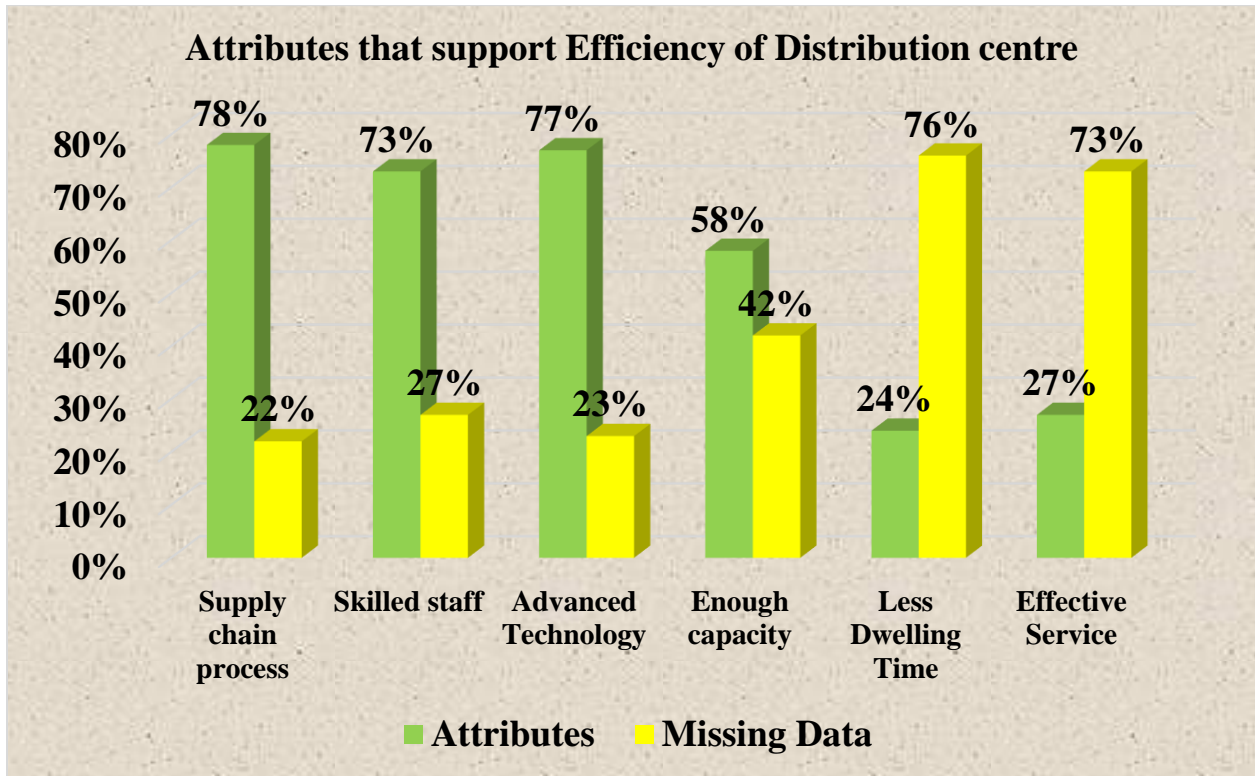
In figure 4.17 above, the attributes that support efficiency of a distribution centre were outlined and will range from the highest to the lowest variables. The supply chain process has a response rate of seventy-eight percent (78%), followed by advanced technology with seventy-seven percent (77%) response rate. The variable (less dwelling time) has a response rate of seventy-six percent (76%) while the variables (skilled staff and effective service) both have a seventy-three percent (73%) response rate. The last variable that the respondents feel does not contribute much to the efficiency of a distribution centre with a response rate of fifty-eight percent (58%) is (Having enough capacity). All the missing data figures are I ignored since they are irrelevant and non-contributory to the information sought in this regard.

Figure 4.18   Downfalls of the Distribution Centre
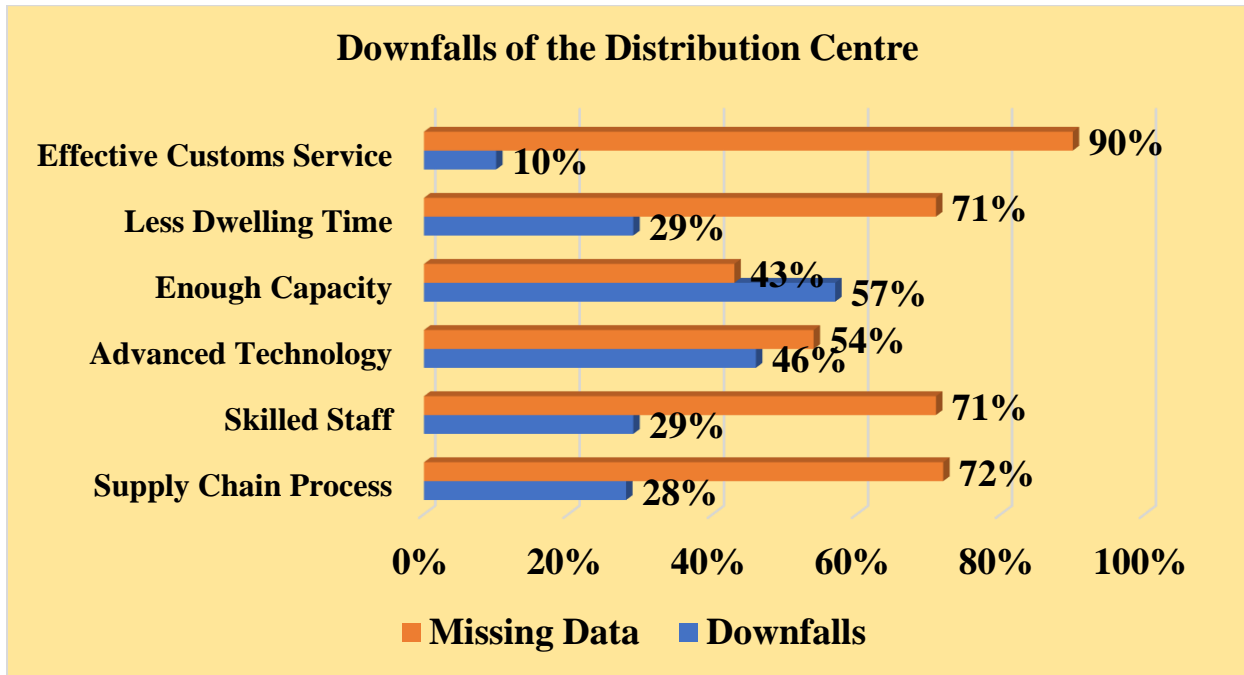
From figure 4.18 above, the downfall of the distribution centre includes an outline from the highest to the lowest variables. The variable (having enough capacity) has a response rate of fifty-seven (57%), followed by advanced technology with forty-six (46%) response rate. The variables (less dwelling time) and (skilled staff) have a response rate of twenty-nine (29%) respectively while the variable (supply chain process) has a twenty-eight (28%) response rate. The last variable that the respondents feel contributes less to the distribution centre with a response rate of ten (10%) is (effective customs service). All the missing data figures are ignored since they are not contributory to the investigative enquiry of the study.

Figure 4.19   Important Variables of the Distribution Centre
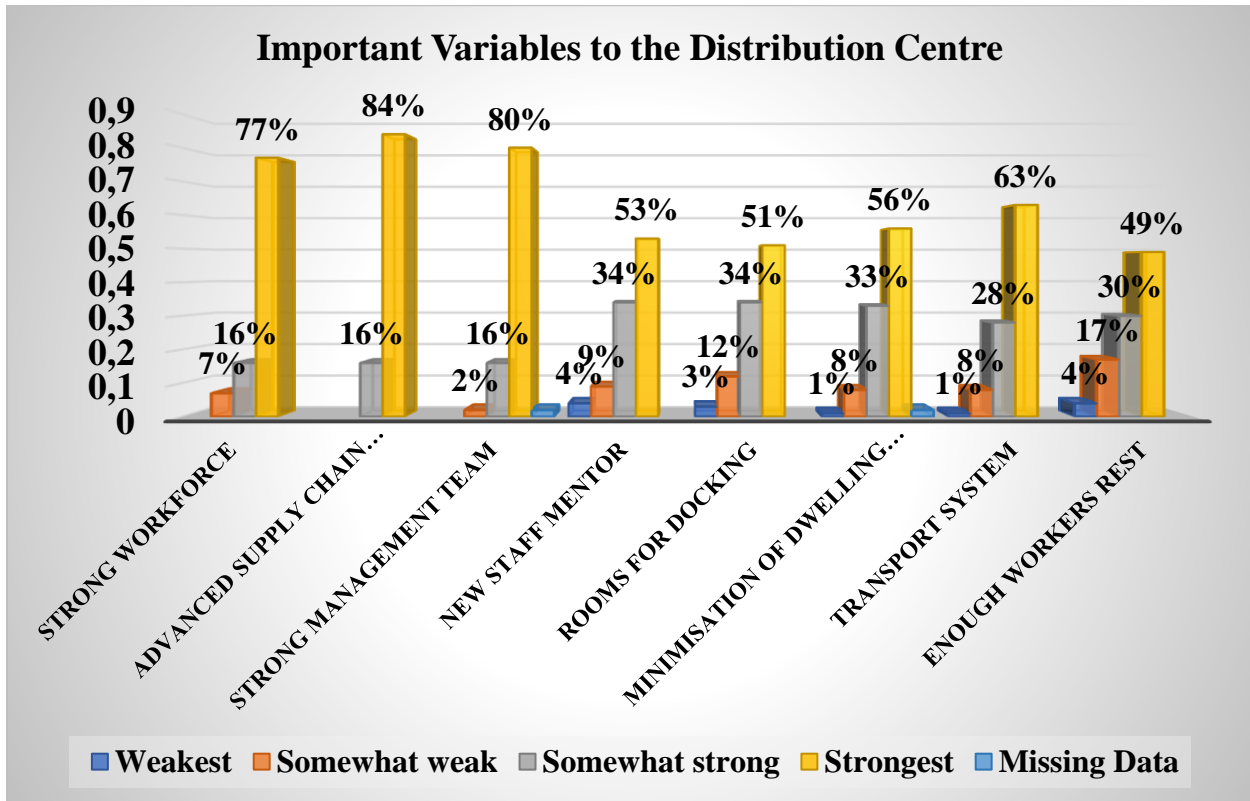
From figure 4.19 above, majority of the respondents 84% were/are of the view that *Advanced supply chain systems* was the most important as it contributes to a better distribution centre. This is followed by the variables (strong management team (80%), strong workforce (77%), transport system (63%), minimization of dwelling time (56%), new staff mentor (53%), rooms for docking (51%) and the weakest variable that is less important to the distribution centre is (enough workers rest) with a response rate of forty-nine (49%).

4.2.2   Binomial Test

A binomial test is conducted when one wants to determine whether the responses from the selected sample size pertaining to staff members currently employed at Mr Price Group are equally selected. The questions that relate to a corresponding statistical significance will bear a significance level of $p = 0.05$ at 95% confidence interval.

Table 4.2   Binomial Test of currently Employed Staff at Mr Price Group

Binomial Test						
		Category	N	Observed Prop.	Test Prop.	Exact Sig. (2-tailed)
Working at Mr Price	Group 1	Yes	97	.97	.50	.000
	Group 2	No	3	.03		
	Total		100	1.00		

From table 4.2 above, there is a statistical significant 'YES' response to the effect that 'most of the respondents are working at Mr Price Group' (p < 0.05). The inference that can be drawn from this is that the employees are very much aware and knowledgeable of the aims, objectives and missions of Mr Price Group.

4.3   Descriptive Statistics

According to Cohen, Manion and Morison (2011:622) descriptive statistics permits researchers to grasp a knowledge of the statistical analysis data. It consists of frequency, standard deviation, cross tabulations and measures of dispersion. This study utilized the descriptive statistics to assess the number of respondents whose perceptions from the questions sought are related. The designated descriptors include the mean, range, standard deviation, maximum, minimum, skewness and kurtosis. Descriptive statistics is suggested when the goal of a study is to explain a data set holistically as opposed to using raw data as it is. As such, descriptive statistics is usually used in reports that include a significant amount of quantitative and qualitative data. The statistics identifies each variable differently by determining whether or not the average respondents are evaluated in relation to agreeing or disagreeing having due regard for the interval data statements. For this study, the variables involved were used to determine the views of the staff of Mr Price Group on the need for a distribution system in Africa Marketplace. A 95% confidence interval is presumed to be the basis of every statistical analysis and was employed in this study. Illustrating this includes, a sample mean which replicates a normal bell-shaped sampling mean distribution. A normal distributed data is observed as the values which lie between 1.96 standard deviations of the population mean. Consequently, the sample mean has a 95% likelihood of being within 1.96 standard deviation errors from the exact population mean.

Table 4.3   Descriptive Statistics from current situation at Mr Price Group

		Need for Distribution centre in Africa	Skills in Distribution Centre	Merchandise Team	Pressure Reduction	Current Distribution Centre	Product Delay in Distribution	Product Availability Satisfaction
N	Valid	99	99	99	99	99	99	99
	Missing	1	1	1	1	1	1	1
Mean		4.24	3.61	3.66	4.10	2.38	3.83	2.97
Median		4.00	4.00	4.00	4.00	2.00	4.00	3.00
Mode		5	4	4	4	2	4	3
Std. Deviation		.822	.843	.835	.802	.877	.948	.909
Skewness		-1.042	-.602	-.136	-.792	.734	-.454	.227
Kurtosis		.764	.240	-.509	.476	.573	-.330	-.253
Range		3	4	3	3	4	4	4
Minimum		2	1	2	2	1	1	1
Maximum		5	5	5	5	5	5	5

Table 4.3 illustrates that the need for distribution centre in Africa, Pressure reduction, Product delay in distribution, Merchandise team and skills in distribution centre are the five highest ranked means in the scale. These variables are the most important and can provide value and efficiency in a distribution centre. These known variables include some values that lie between 1.96 standard deviations of the mean. Thus, the sample mean reflects the true population mean. The mode values cells further confirm the central point in the sample. This indicates that "agree" is the most frequently occurring value amongst these five variables. The skewness can be defined by the distribution of the variable but kurtosis defines information on the distribution 'peakedness' (Pallant, 2011:52). In all five (5) cases, the skewness is a negative value ranging from -.136 to -1.04, thus representing a negatively skewed distribution and the scores are clustered towards the right upper end of the scale. The kurtosis value ranges from - 0.330 to 0.764 thereby signifying that the distribution is centrally clustered.

4.4   Bivariate Analysis

4.4.1 Pearson Product-Moment Correlation Coefficient

The Pearson Chi Square values established the results of the cross tabulated variables and strengthened the choice to accept or reject the null hypothesis. However, the multivariate analysis technique was carried out to outline the presence of multivariate relations. The Pearson Product-Moment Correlation Coefficient measures the degree and direction of linear relationships. Epitomized by an *r* symbol, the value of the coefficient lies within +1 and -1 (Pallant, 2011:285). The degree of the connection is shown by the listed magnitude. The negative or positive sign only indicates the direction in which the relationship exists (Pallant, 2011:286).

Table 4.4   Pearson Product-Moment Correlation

Pearson *r*	Strength and Direction
+1	Perfect positive
+0.7	Strong positive
+0.4	Moderate positive
0.0	No relationship
-0.4	Moderate negative
-0.7	Strong negative
-1	Perfect negative

***Source*:** Cooper and Schindler. (2008) *Business Research Methods*. 10th Edition. New York: McGraw Hill.

Table 4.5   Pearson Correlation

		NDC	SDC	MT	PR	CDC	PDD	PAS
Pearson	**NDC**	**1.00**	.722	.277	.006	.117	.618	.399
Correlation	**SDC**	.722	**1.00**	.035	.025	.000	.178	.155
	MT	.277	.035	**1.00**	.019	.676	.883	.695
	PR	.006	.025	.019	**1.00**	.490	.624	.230
	CDC	.117	.000	.042	-.070	**1.00**	-.276	.296
	PDD	.618	.178	.883	.624	.006	**1.00**	.001
	PAS	.399	.155	.695	.230	.003	.001	**1.00**

NDC = Need for Distribution Centre   **SDC** = Skills for Distribution Centre

MT = Merchandise Team   **PR** = Pressure Reduction

CDC = Current Distribution Centre   **PDD** = Product Delay in Distribution

PAS = Product Availability Satisfaction

Statistical summary that depicts the relationship within the variables is considered in this research study in table 4.5 above. Values between 0.0 and 0.3 show no relationship. Values between 0.4 and 0.6 show a moderate relationship whilst the correlation values that are greater than 0.7 are considered a strong positive relationship. Most of the variables in the correlation table 4.5 have a moderate positive relationship whilst a few have a strong relationship and some have no defined relationship.

4.4.2   Factor Analysis

According to Graham (2010:40), factor analysis is described as "a statistical technique used to categorize sets of variables". It is a means to create a structure of the hidden variables in a data set. Thus, it (factor analysis) is used to understand the insights elicited from the questionnaire and thus reduces the data volume while retaining the important characteristics. Each factor comprises of the variables grouped together in the data set wherein each variable is assigned to a factor loading constant. This describes the significance of that variable to the composition of the factor.

Table 4.6   KMO and Barlett's Test, Communalities, Total Variance Explained, Rotated Component Matrix

KMO and Bartlett's Test					
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.				.603	
Bartlett's Test of Sphericity		Approx. Chi-Square		65.328	
		Df		21	
		Sig.		.000	

Rotated Component Matrix					
	Factor Loading	Eigen value	% of Variance	Cumulative %	Communalities Extraction
Factor One: Features of the Distribution Centre					
Current Distribution centre	.759	1.807	25.808	25.808	.642
Product Availability Satisfaction	.663	1.561	22.305	48.113	.543
Skills in Distribution Centre	.596	1.007	14.379	62.492	.656
Factor Two: Distribution Centre Requirements					
Pressure Reduction	.777	.819	11.704	74.195	.605
Merchandise Team	.599	.647	9.245	83.440	.453
Need for Distribution Centre in Africa	.587	.628	8.968	92.409	.765
Factor Three: Delays					
Product Delay in Distribution	.566	.531	7.591	100.000	.711
''Extraction Method: Principal Component Analysis., Rotation Method: Varimax with Kaiser Normalisation., Number of items =7".					

Factor analysis permits one to reduce the number of items or variables to a reasonable and practical factor. The Bartlett's test of Sphericity and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy were employed in this study as statistical measures to access the data factorability. KMO measures the variance proportion. The Kaiser-Meyer-Olkin (KMO) score of $0.603 > 0.6$ indicates sampling adequacy. This means that there is a reasonable correlation between the variables. KMO usually has a very high degree of variance and is always desirable in a study. The Barlett's test of Sphericity is employed to determine the homogeneity of an assumed variance. The outcome value of the test produces a significant value of 0.05 or smaller (Pallant, 2011: 286). The outcome result from the KMO is 0.603, and the Bartlett's test is significant ($p = 0.000$), hence the factor analysis is appropriate at 21 degrees of freedom. Communalities' values range from 0 to 1. So, if any value is less than 0.3, it indicates that the item does not fit with the other items in its component.

From the table 4.6, all the figures attained in the communality extraction cell are greater than 0.3 and this demonstrates the fit with the other items. This study is concentrated on all the components which have an eigenvalue of 1 or more. In table 4.6 above, the first three components have eigenvalues above 1 (1.807, 1.561 and 1.007). These three components define a total of 62.49% of the variance. A scree plot was employed in this study to identify the number of components removed using Kaiser Criterion. The Scree test shows all the factors above the 'break' on the plot while adding most of the explained variance in the data set (Pallant, 2011:183). Since all the critical factors of the variance are known, the factors are rotated to assist in the interpretation. The varimax technique was employed to achieve the factor loadings for each definite variable. Hence, all the values for the items that were retained had a correction value that was greater than 0.05.

Interpretation and Factor Labelling

From table 4.6, the data interpretation follows as the number of factors was determined through the factor analysis. The factors were 'rotated' using the pattern presentation by presenting the pattern of loadings so that it was easier to interpret (Pallant, 2011:185). Employing the Varimax rotation, component 1 explains 25.81% of the variance, component 2 explains 22.31% and component 3 explains 14.38% of the variance. The total variance explained (62.49%) does not change after rotation although the dispersion volume between the three components changes. The nature of the underlying latent variable represented by each component can be identified by the highest loading on each of the components. The explanation thus includes:

Factor One: Features of the Distribution Centre

This factor holds the highest loadings from the three extracted factors. The first factor (Current distribution centre) has the highest variance of 25.81%. According to Bowersox, Closs, Cooper and Bowersox, (2013: 86), the strategies, responsibilities and role of warehouse are evident in areas such as reverse logistics, information technology and the integration of supply chain. The capabilities of an organisation to achieve successful operations and networking are requirements of a distribution centre. The proposed distribution centre for Africa is expected to be at a good location with effective design and operations and top-notch information technology base.

The second highest factor (product availability satisfaction) has a variance of 22.31%. Ecklund (2010) asserts that organisational strategies for optimisation are used to position the availability of products and fast delivery towards competitive advantage. At the same time, costs trade off related to equipment, transportation, workforce and other miscellaneous cost variables are also optimised. The third factor (skills in distribution centre) has a variance of just 14.38%. Having a skilled workforce is tantamount to achieving competitive advantage. All these factors are independent but combining them maximizes huge benefits and increase competitive advantage to any firm.

Factor Two: Distribution Centre Requirements

This factor refers to some necessary features of a distribution centre (pressure reduction, merchandise team and need for distribution centre in Africa). The highest loading amongst these three factors with a variance of 11.70% is the variable (pressure reduction). If the local distribution centre are not well catered for in terms of expanding the corridors to international affiliates and diverse countries, it may degenerate in service rendition. Hence, the expansion of distribution centres to other African countries will assist the local one to increase service performance.

The second highest factor is the variable (merchandise team) with a variance of 9.25%. This indicates that the team of workers employed at the distribution centres in line with other teams from affiliated countries must collaborate to achieve efficiency. Without the human skills, coordination of processes will seem a bit difficult to attain, even though the world is in an era of digitisation and technology implementation. The least contributory variable to this factor is (need for distribution centre in Africa) with a variance of 8.99%. If there are no deficiencies in handling products, flow of materials and goods in the supply chain and complexities in customer demand, retailers will have no need to expand its distribution centre in Africa.

Moreover, the sporadic growth of the population in our world today, speaks volume to businesses that would want to retain the status quo. Notwithstanding the fact that some businesses survive despite some disruptions in their supply chain, any business or organisation that lacks the thinking of expanding its borders, will face extinction or irrelevance soon.

Factor Three: Delay

The last variable that creates a variance of 7.59% is product delay in its distribution. When products are not provided to customers when they are requested, the value is lost entirely. The negative impact of product unavailability is even much more than the cost of producing the goods. To optimally preserve operations of a distribution centre entails best performance in all the facets of the organisation. The figure below explains the scree plot and shows the three components that affect expansion of a distribution centre in Africa.

Figure 4.20   Eigenvalue Scree Plot
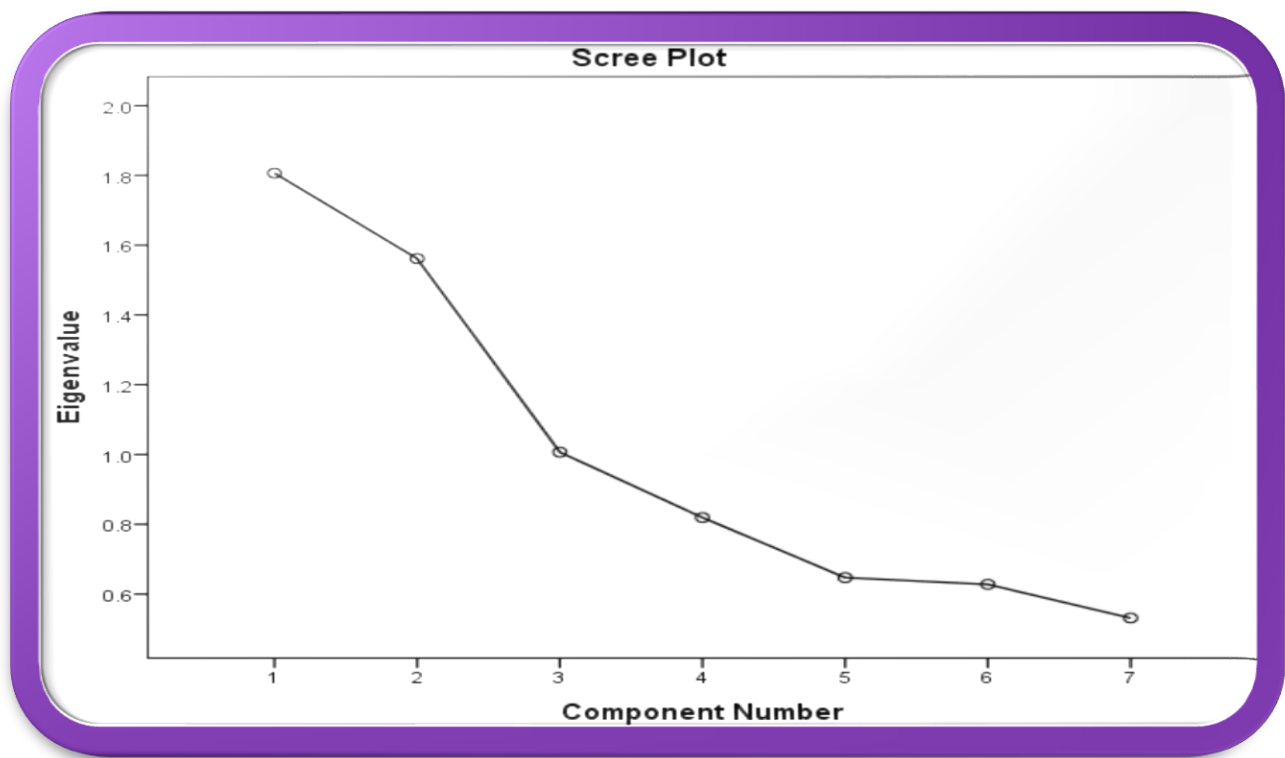
Variance in data segmentation is typically explained using the scree plot. The entire points on the graph appear in a descending order of the listed magnitude of the eigenvalue (Pallant, 2011:294). The relative characteristics of the factors can also be observed from the scree plot. In figure 4.20 above, the scree plot recognizes only three components as the most critical and contributory

factors. Also, the change/line break after the third component from the plot can be noted. There is little contribution to the solutions exhibited by the lower end components.

4.5   Multivariate Analysis

4.5.1   Multiple Regression

According to Williams (2015), multiple regression is described as a statistical tool that permits one to scrutinize the degree to which multiple independent variables are associated to a dependent variable. The outcome can be used to inform accurate forecast. This model can be further analysed in relation to the extent of model fit, explanatory power and variation. A model summary table is used to describe the dependent variable and the regression model. The coefficient of determination (R squared) measures the degree of linear explanation by the model. According to Pallant (2011:294), multiple regression explores the association amongst one continuous dependent variable and several independent variables and is dependent on correlation.

Table 4.7   Model Summary, ANOVA, Coefficients

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.411[a]	.169	.115	.855	1.831
Predictors: (Constant), Product Delay in Distribution, Merchandise Team, Skills in Distribution Centre, Pressure Reduction, Need for Distribution centre in African, Current Distribution Centre					

ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13.675	6	2.279	3.119	.008[b]
	Residual	67.234	92	.731		
	Total	80.909	98			
Predictors: (Constant), Need for a Distribution centre in Africa, Merchandise Team, Skills in the Distribution Centre, Pressure Reduction, Product Delay in the Distribution, Current Distribution Centre						

Coefficients

Model	Unstandardized Coefficients	Standardized Coefficients	T	Sig.	Collinearity Statistics

		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.778	.843		4.483	.000		
	Need for Distribution Centre in Africa	-.054	.111	-.049	-.488	.626	.890	1.124
	Skills in Distribution Centre	.060	.116	.056	.520	.604	.786	1.272
	Merchandise Team	.061	.108	.056	.559	.577	.913	1.096
	Pressure Reduction	-.122	.118	-.108	-1.038	.302	.837	1.195
	Current Distribution Centre	.192	.112	.186	1.722	.088	.778	1.286
	Product Delay in Distribution	-.254	.096	-.265	-2.658	.009	.908	1.101

The R squared value is 0.411 in model 1 and this explains the variation in *Product availability* as the predictor (independent) variables are added to the model. The adjusted R squared reflects the number of variables that is used and shows the suitability of the model to the sample data.

Hence, the adjusted R square value is equal to 0.169. The Durbin Watson statistics is 1.831. The actual value of Durbin-Watson outcome normally lies within the range of 1.5 and 2.5. This study used the ANOVA table to determine whether or not the multiple R in the population is equal to zero. The outcome from the ANOVA table is also used to assess the significance of the result. The ANOVA table yields an F statistics value of 3.119 and a significant *p*-value of 0.08. Only two variables have significant values of 0.088 and 0.009. The inference drawn is that a connection exists between the dependent variable (Product availability) and the independent variables (Current distribution centre and product delay in distribution). Tolerance and VIF values were examined to check for multicollinearity. Table 4.7 indicates that all the respective modes' tolerance values are greater than .10 and all the VIF values are less than 10. Hence, there is no multi-collinearity that exists in the analysis thus far. The beta values assist in the description of the predictor variable's position in relation to the dependent variable. The larger the beta values, the more the degree of impact it has on predicting the dependent variable. This is recognized in the value of the independent variable obtained with the most significant level. The variable (current distribution centre) has the highest beta value of 0.186 which makes it the primary contributory factor that explains the dependent variable when every other variable is controlled.

4.5.1.1 One Sample Test

The significance of this independent variable to the dependent variable can be further elucidated using the one-sample *t*-test from the regression analysis. All the six predictor variables obtained a significant *p*-value of $0.000 < 0.05$ and this indicates that the average response from the sample represents the true population mean.

Table 4.8   One Sample Test

One-Sample Test						
	Test Value = 0					
	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Skills in Distribution Centre	42.564	98	.000	3.606	3.44	3.77
Merchandise Team	43.573	98	.000	3.657	3.49	3.82
Pressure Reduction	50.896	98	.000	4.101	3.94	4.26
Current Distribution Centre	27.038	98	.000	2.384	2.21	2.56
Product Delay in Distribution	40.179	98	.000	3.828	3.64	4.02
Product Availability Satisfaction	32.520	98	.000	2.970	2.79	3.15

4.5.1.2   Residual Statistics

The standardised residual from this study is min = -2.541 and max = 2.719 which lies within the expected value between -3.3 and ± 3. The standardized residual min = -2.659 and max = 2.961. The model has a normal distribution with mean 0 (0.000) and standard deviation close to 1 (0.969) from the standardised value. The Cook's distance (D) measurement designates the impact which an observation has on the overall model. When D >1, an outlier problem exists (Pallant, 2011:295). The study's statistical result shows that the Cook's value is between min = 0.000 and max = 0.235.

Therefore, the D value is lower than 1 and this shows that the observation does not have a significant large effect on the regression analysis. Leverage observation takes on the value within a range of 0 and 1, with 0 indicating no problem or effect on regression and 1 states otherwise. In this study, the leverage level lies between the range of min. of 0.009 and max of 0.210. The Mahalanobis distance is employed to detect outliers in any observation by exploring the degree to which the score lies from the centre of all the predictor variables. The values include (min = 0 .892 and max = 20.590).

Table 4.9   Residuals Statistics

Residuals Statistics[a]					
	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.24	3.88	2.97	.374	99
Std. Predicted Value	-1.957	2.444	.000	1.000	99
Standard Error of Predicted Value	.118	.401	.218	.065	99
Adjusted Predicted Value	2.17	3.99	2.97	.383	99
Residual	-2.172	2.324	.000	.828	99
Std. Residual	-2.541	2.719	.000	.969	99
Stud. Residual	-2.659	2.961	.001	1.013	99
Deleted Residual	-2.379	2.758	.002	.906	99
Stud. Deleted Residual	-2.752	3.096	.003	1.026	99
Mahal. Distance	.892	20.590	5.939	4.312	99
Cook's Distance	.000	.235	.014	.033	99
Centered Leverage Value	.009	.210	.061	.044	99
a. Dependent Variable: Product Availability Satisfaction					

4.5.1.3   Normality and Linearity

The normality and linearity plot of regression guarantees that common variances are not violated. Validity designates that the assumptions about the residual values of a normal P-P plot follows a normal distribution. The line points are the expected values which coincide with the diagonal line and is suggestive of the fact that there are no deviations from normality.

Figure 4.21   Normal P-P Plot of Regression Standardised Residual
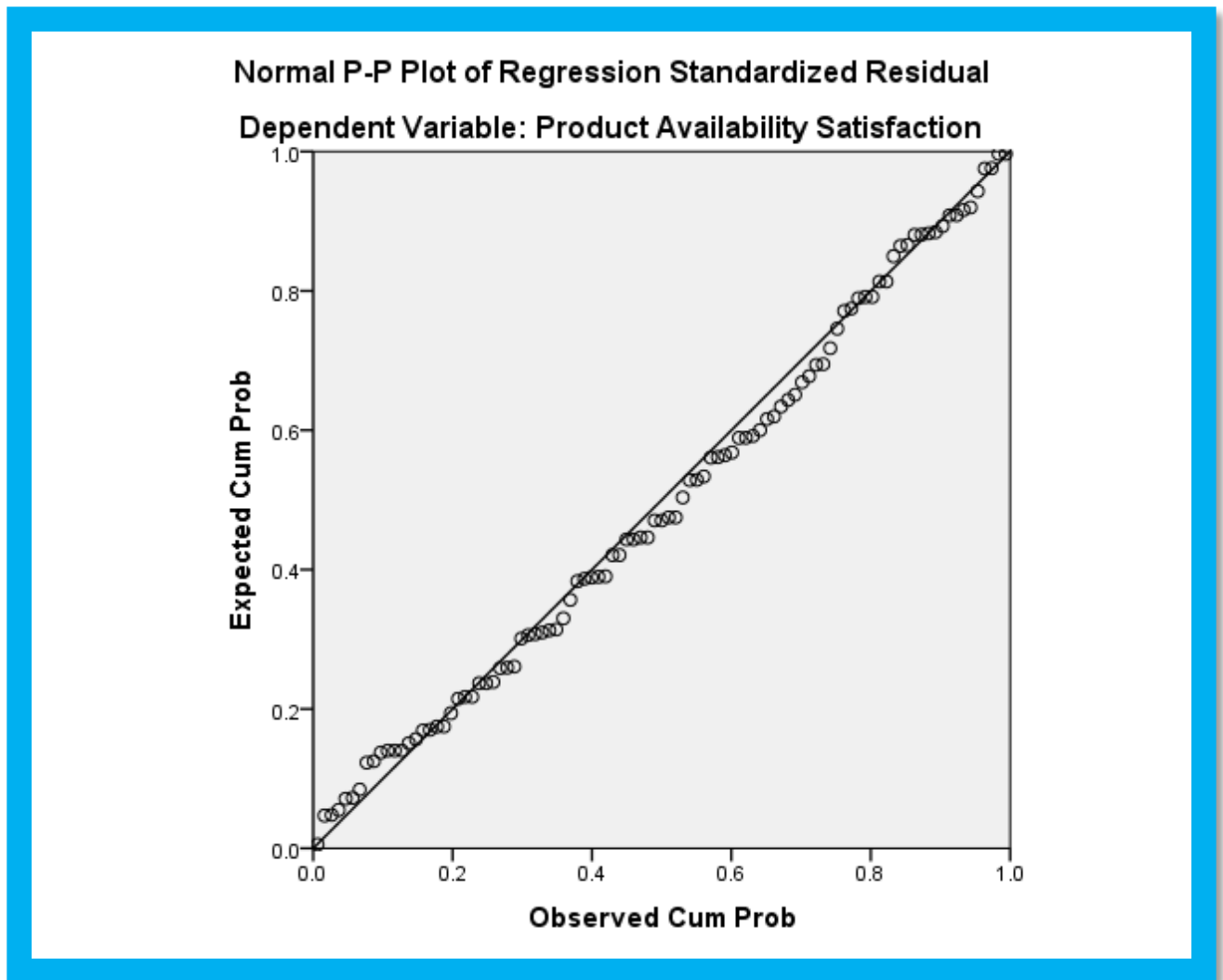
From the plot in figure 4.21 above, the greatest number of the points lie in a reasonable straight diagonal from the bottom left to the top right-hand corner. This specifies that there are no major deviations from normality.

4.6. The One-Way Analysis of Variance (ANOVA)

The one-way ANOVA indicates whether or not there exists significant differences in the mean score on the dependent variable across groups. A Post-doc test is used in establishing where this variance lies (Pallant, 2011:217). The independent variable usually matches different levels and is mostly a continuous variable. Analysis of the variance likens the variance between the varied groups with the variability within each of the groups. A significant F test shows that the null hypothesis which states that the population means are the same can be rejected (Pallant, 2011:214). This study thus compares the age group with the *Need for distribution centre in Africa* to determine which age group bracket supports the expansion of a distribution centre to other African Countries.

Table 4.10   One-way between-groups Anova with Post-Hoc Tests

Test of Homogeneity of Variances					
Need for a Distribution Centre in Africa					
Levene Statistic		df1	df2	Sig.	
.455		4	90	.769	
ANOVA					
Need for a Distribution Centre in Africa					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9.725	4	2.431	3.928	.006
Within Groups	55.707	90	.619		
Total	65.432				

It can be gleaned from Table 4.10 above that the Levene's test for the homogeneity of the variances that test whether the scores' variance is equal for each of the five (5) groups has a significance value of 0.769. When this value is greater than 0.05, then one is deemed not to have violated the homogeneity of variance assumption. From the analysis, figure 0.769 is greater than 0.05 so the test has not violated the assumption. The table provides information on within-groups and between-groups sum of squares with degrees of freedom. The interest lies on the Sig. column with a value of 0.006. If this value is less than 0.05, then a significant difference exists among the mean scores on the dependent variable for the five groups. Hence, since the value of 0.006 is less than 0.05, then there is a statistical significant outcome somewhere between the groups. Furthermore, this can be confirmed via the post-hoc tests below.

Table 4.11   Post-Hoc Tests

Multiple Comparisons						
Dependent Variable: Need for a Distribution Centre in Africa						
Tukey HSD						
(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
18 - 24 Years	25 - 31 Years	-.375	.227	.469	-1.01	.26
	32 - 38 Years	.019	.256	1.000	-.69	.73
	39 - 45 Years	-.438	.377	.773	-1.49	.61
	46 And Above	1.563	.590	.070	-.08	3.21
25 - 31 Years	18 - 24 Years	.375	.227	.469	-.26	1.01
	32 - 38 Years	.394	.200	.287	-.16	.95
	39 - 45 Years	-.063	.341	1.000	-1.01	.89
	46 And Above	1.938*	.568	.008	.36	3.52
32 - 38 Years	18 - 24 Years	-.019	.256	1.000	-.73	.69
	25 - 31 Years	-.394	.200	.287	-.95	.16
	39 - 45 Years	-.457	.361	.713	-1.46	.55
	46 And Above	1.543	.580	.068	-.07	3.16
39 - 45 Years	18 - 24 Years	.438	.377	.773	-.61	1.49
	25 - 31 Years	.063	.341	1.000	-.89	1.01
	32 - 38 Years	.457	.361	.713	-.55	1.46
	46 And Above	2.000*	.642	.020	.21	3.79

		Mean Difference	Std. Error	Sig.	Lower Bound	Upper Bound
46 And Above	**18 - 24 Years**	-1.563	.590	.070	-3.21	.08
	25 - 31 Years	-1.938[*]	.568	.008	-3.52	-.36
	32 - 38 Years	-1.543	.580	.068	-3.16	.07
	39 - 45 Years	-2.000[*]	.642	.020	-3.79	-.21
*. The mean difference is significant at the 0.05 level.						

From ANOVA table 4.10, there is a statistical significance value of 0.006. This post-hoc test in this table indicates exactly where the differences amongst the groups happened. From the table labelled 'mean difference', there are values with asterisks next to it. This means that any two groups compared are significantly dissimilar/different from one another at the P<0.05 level. It is noticeable that group 2, group 4 and group 5 are statistically different from one another.

That is the 25 to 31years age group, 39 to 45years age group and the46 and above age group differ significantly in terms of their support as regards accepting that there is a need for a distribution centre in Africa.

Calculating the Effect Size

The effect size is calculated by Eta squared = sum of squared between groups divided to total sum of squares. Thus, 9.725is used as the sum of squares for between groups divided by the total sum of squares 55.707. The resulting eta squared value is 0.175 which is a large effect. According to Cohen (1988), an eta effect size of 0.01 is classified as a small effect, 0.06 as medium effect and 0.14 and above as large effect.

Table 4.12.   Mean and Standard Deviation

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
18 - 24 Years	16	4.06	.772	.193	3.65	4.47
25 - 31 Years	49	4.44	.681	.098	4.24	4.64
32 - 38 Years	23	4.04	.976	.204	3.62	4.47
39 - 45 Years	6	4.50	.837	.342	3.62	5.38
46 And Above	2	2.50	.707	.500	-3.85	8.85
Total	95	4.24	.834	.086	4.07	4.41

Since the result is statistically significant, the actual difference in mean scores between the groups was large. The effect size that has been calculated was 0.175. Post-hoc comparisons using the tukey test indicated the mean square for Group 2 (M = 4.44, SD = 0.681) as significantly different from Group 4 (M = 4.50, SD = 0.837) and significantly different from Group 5 (M= 2.50, SD = 0.707). Group 4 (M= 4.50, SD = 0.837) was significantly different from Group 5 (M=2.50, SD = 0.707). Hence, older people reported the highest level of the need for a distribution centre in Africa.

Figure 4.22   Means Plot
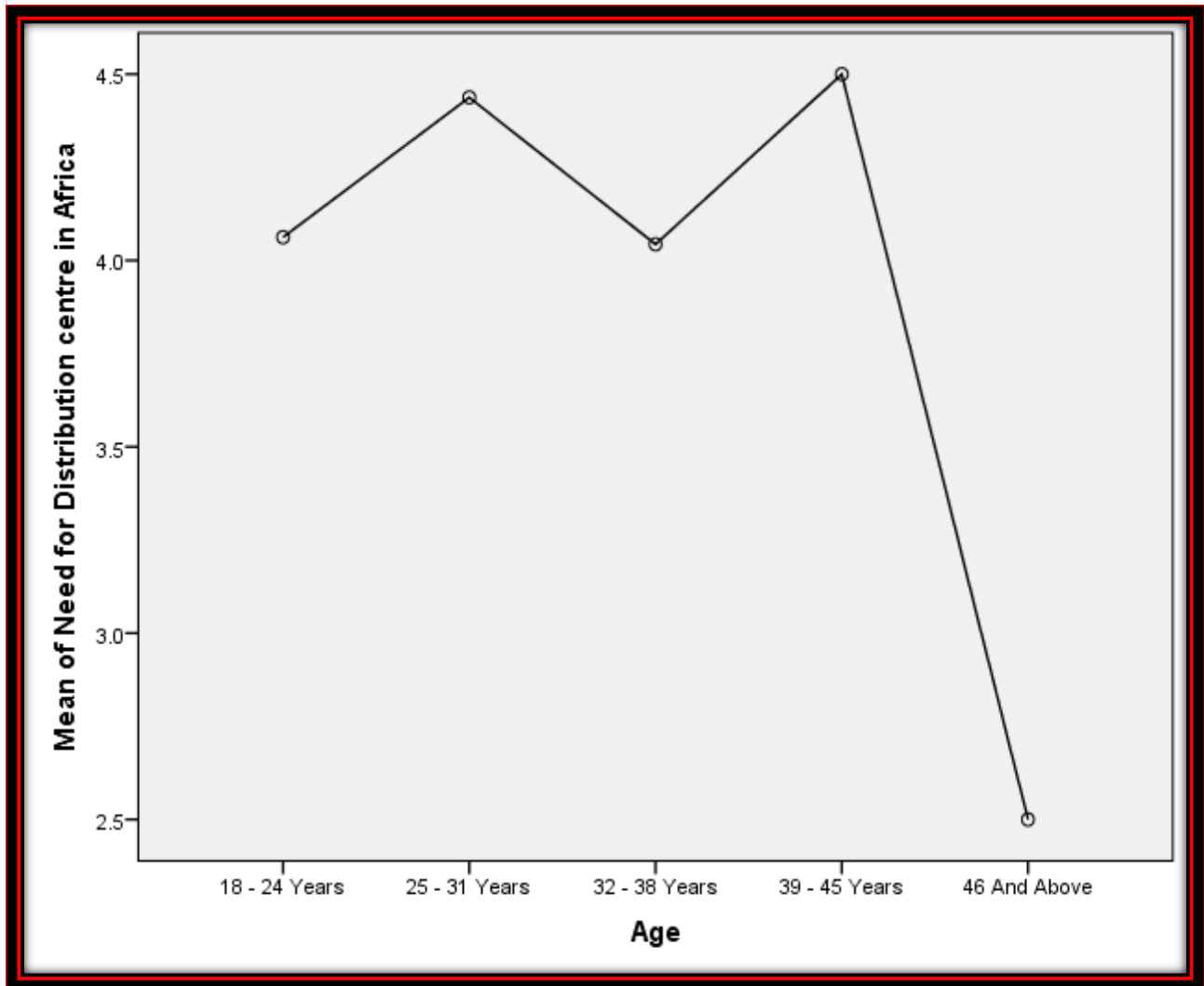
The above plot depicts an informal means of comparing the mean score for the varied groups. From igure 4.22, the 46 and above age group recorded the lowest score as regards the need for a distribution centre. The 25 to 31 years age group was the next and the highest score was for the age group 39 to 45 years.

In presenting the result, a one-way between groups analysis of variance was conducted to explore the impact of age on the respondents indicating that there is a need for a distribution center in Africa. The subjects were originally divided into five (5) groups according to their age group. There was a statistically significant difference at the $P<0.05$ level for the five age groups [F (4, 90) = 3.9, $P=.05$]. The major difference was between ages 25 to 31yearsand 39 to 45yearswith age group 46 and above.

4.7. Conclusion

The techniques described in this chapter were used to produce the outcomes which are presented in this chapter. This study consisted of information gathered from the staff of Mr Price Group on the supply chain distribution system towards the African marketplace. The data collected was based on the types of supply chain distribution systems that can be used to expand into Africa, information technology advancements necessity and satisfying the end customer. The analysis revealed that there is great need for retailers to expand their business to other African countries to stay competitive and still be in the game of business. Furthermore, a multivariate analysis and one-way Anova was carried out to identify the differences amongst the respective groups. The next chapter gives a detailed discussion on the findings from this chapter.

CHAPTER FIVE
DISCUSSION OF RESULTS

5.1. Introduction

Chapter one presented the background of the study, introduction of the research objectives, the research questions and the research problem. Chapter two presented the literature review with respect to the concept of supply chain distribution system towards African Marketplace: A Case of Mr Price. Chapter three outlined the research methodology that was used in the study, the data collection techniques and process and the data analysis methods. Chapter four presented and analysed the data collected from the respondents using diagrams, tables, and statistical descriptions. The objectives of this research study are explained in this chapter with the use of the outcomes deduced from the analysed data. The research questions from the first chapter are also evaluated to provide insights to the study. The biographical information is deliberated upon first, followed by the discussion of the four objectives of the study. The study sought to comprehend the supply chain distribution system towards the African Marketplace with a focus on Mr Price group.

5.2. Biographical Data Discussion

The majority of the respondents were staff of Mr Price group with a few associates that responded to the questionnaires. A total of one hundred and forty-eight (148) questionnaires were circulated to the respondents and one hundred (100) responses were received, representing a 68% return rate. Most of the respondents with a rate of fifty-four percent (54%) were females and only forty-six percent (46%) were males. This suggests that females are given equal opportunity in the Mr Price work environment than in previous years. Overall, most of the respondents who participated in the study constituting about seventy-eight percent (78%) of the total respondents belonged to the lower level staff of Mr Price firm. The highest age group lies between 25 and 31years. Thirty two percent (32%) of the respondents were blacks. Sixty-nine percent (69%) of the respondents worked in the retail industry below 10 years. It was also noted that most of the respondents are lower level staff and most of them currently work at Mr Price. Most of the respondents had been employed below 10 years and selected Nigeria as the best country to serve Africa. Furthermore, most of the respondents agreed that the supply chain process, advanced technology, less dwelling time and effective service were factors that support efficiency of a distribution centre.

Additionally, the important variables of a distribution centre as noted by the respondents are advanced supply chain systems, strong management team, strong workforce and good transport system.

5.3. Discussion of the Research Objectives
Objective One: Support of Centralised or Decentralised Supply Chain Distribution System in Expansion to the African Marketplace

In addressing the above objective, many different variables were taken into consideration to assist the examination of utilizing a centralised or a decentralized or hybrid distribution system. Notably, the centralized and decentralised systems are both good since different organisations are moving towards putting in place better structures in the business models with one voice echoing the viability of creating value across the business. For instance, some companies such as Woolworths use a centralised distribution system which covers all inbound and outbound logistics, distribution centers and transport operations.

A centralised distribution system has simplified distribution for the supplier, deliveries to stores, lowered costs to operate and improved control of logistics (Woolworths report, 2010). Making the centralised distribution system the core platform for increasing its growth levels, Woolworths thrives in delivery, cost effectiveness with increased product availability across a wider geographical location (Woolworths report, 2010). On the other hand, another retail company, pick n' pay, expanded itself into having more distribution centers using a centralised distribution system. Pick n' Pay found itself reaching a 15% reduction in stockholding as asserted by Van der Merve who is the supply chain director of the company (Independent Newspaper, 2014).

Through DCs, large retail chains merge deliveries from their suppliers and deliver straight to the stores. Through the exertion of control over distribution, businesses can reduce inventory levels and enhance business efficiency (Fernie, Sparks and McKinnon, 2010). For this objective, the researcher reviewed the relevant literature and thus established that both the centralisation and decentralisation distribution systems have good qualities that have the potential of assisting the expansion across the African region.

Objective Two: The Extent of Sustainable Retail Distribution Systems towards Improving Product Availability across the African Region.

The data analysed as derived from the respondents indicate that having products available at the right time and place for consumers yields good benefits for businesses. The study established that forty-three (43%) of the respondents strongly agreed that there is a need for a distribution centre in Africa for Mr Price Group. Fifty-two (52%) of the respondents agreed to the necessity of having a good skilled workforce in any distribution centre and forty-three (43%) of the respondents agreed that setting up a merchandise team will be able to plan for international distribution centre. Fifty (50%) of the respondents agreed that the introduction of a distribution centre in Africa will reduce pressure on local distribution centres. However, fifty-two (52%) of the respondents disagreed that the current distribution system delays products from reaching Africa. Surprisingly, forty-two (42%) of the respondents were neutral as regards their views pertaining to African customers' satisfaction on the current product availability. From the literature review, other retailers such as Woolworths, Spar Checkers/Shoprite and Pick n' Pay have distribution centres in Africa as they are of the view that the closer a business is to the customers, the more satisfied the customers are. Woolworths focuses on its brand growth through satisfying and maintaining customer loyalty. The company works hard in building and maintaining long term relationships with its customers (Woolworths report, 2010). Pick n Pay also introduced more distribution centers whereby customers benefit the most by means of better customer services and better quality and fresher produce (independent newspaper, 2014). Grubor, Milicevic, Djokic, (2016:221), highlight that the essential performance indicator of the whole supply chain is shown by product availability for retail consumers. With an adequate level of product availability, the service quality level is increased and can enhance customer loyalty (Beneke, Hayworth, Hobson and Mia, 2012:29) and retailers' business performance (Grubor, Milicevic, Djokic, 2016:221). Therefore, in preparing for the development of a good distribution centre, having available products always becomes a priority for businesses. Thus, product availability must form part of an organisation's strategy and must be included in the business models.

Objective Three: The Challenges of Inventory Positioning on the Existing Outbound and Inbound Product Flow Systems across the African Continent

From the analyzed data, most of the respondents agreed that a supply chain process, a strong management team, a strong workforce and a good transport system are factors that support efficiency and inventory positioning of a distribution centre across the African continent.

According to Frohlich and Westbrook (2001), an effective supply chain management integrates the flow of products, information and material flows in the supply chain. Due to customers' constant demand for easy access to product, the process in the supply chain should not be interrupted. To support an organisation such as retail in attaining its objectives, a strong workforce and management team is needed to make a distribution centre successful. Furthermore, a good transport system makes an efficient logistics system.

It can be gleaned from the analysis that the challenges of inventory positioning on product flow systems include minimising the dwelling time, creating rooms for docking and having a strong management team. If the dwelling time increased when the products are handled from one place to another, efficiency is increased in the distribution center. Moreover, to maintain sustainability and continuity towards an optimal distribution system, organisations need to create room for cross docking. According to Bowersox, Closs, Cooper and Bowersox, 2013:219) cross-docking enhances lean manufacturing by minimizing wasted time, labour, equipment and literally optimizing the process of distribution. Van Belle (2012) highlights that cross docking allows for improved customer service, storage space reduction, enhanced delivery of finished products to customers, lower overstocks and faster turnover of inventory. All these factors suggest that a good distribution centre should have a good cross-docking network to achieve competitive advantage for the entire system of supply chain.

Objective Four: The Influence of Supply Chain Distribution Technology for the Availability of Real Time Information and Inventory Visibility

According to Bhandari (2012:24), technology is the driver that improves supply chain competitiveness and performance of logistics system. Masum, Bhuiyan and Azad (2013:9) aver that the wireless technology such as RFID can improve product traceability and visibility in the supply chain. Notably, it increases efficiency, responsiveness of processes and can also reduce handling, storage and distribution costs.

The benefit of information sharing is in the manufacturer's capability to be responsive to the needs of the retailers which is achieved by knowing the inventory levels of the retailer and the real demand visibility. Gattorna (2009) suggests that an important aspect of supply chain performance is visibility while information sharing is the glue holding all resources in check along the supply chain. Visibility can be improved through collaboration among supply chain partners and by leveraging emerging financial solutions (Heaney, 2013:10).

In all this, shifting business propositions to the borders of other African countries with distribution centres located at strategic locations will assist Mr Price Group to attain competitiveness. The business already has the requisite technology to sustain the performance of its operations and satisfy customers and this will make it possible for product availability not to be a hitch. Available updated technology will enhance the outbound and inbound systems most importantly because this directly impacts on the speed at which products enter and exit the distributions centres.

The factor that may hinder performance and use of technology is the human capital skills to operate the technology. As much as the respondents rated the human capital skills in South Africa highly, this does not necessarily mean that in the African market, Mr Price Group will be rated in the same way. Studies show that when if companies invest in their employees through training, the return benefits are productivity and profitability (Murphy and Topel, 2014:16). The investment in human capital can improve the distribution centre's productivity and efficiency levels by improving the knowledge, skills and abilities of the employees (Kenneth, 2013:6-71).

5.4. Multiple Regression Discussion

From the analysis on multiple regression, the variable (current distribution centre) has the highest beta value which makes it the primary contributory factor that explains the dependent variable (product availability). This shows that statistically it is known that when products are available, a distribution centre performs optimally thus achieving competitive advantage. The strength of this proposition is attested to by the respondents' view on the need for a distribution centre in Africa. If the African marketplace expands, the root of economic growth will be tapped into and thus provide avenues for enrichment, profitability and building a world class structure.

5.5.   Conclusion

In conclusion, an alignment on the current work arrangement at Mr Price has been considered. The study primarily probed into customers' satisfaction by means of service delivery. It gives insights into the concepts of decentralisation, centralisation, and the hybrid system of distribution as applied in organisational business operations. Thus, the objectives of the study have been achieved. To this end, the understanding of how Woolworths and Pick 'n Pay have entered into the African market was discussed. This discussion, arguably, gives some guidance and insight into how other retailers have entered into that market successfully.

CHAPTER SIX

RECOMMENDATIONS AND CONCLUSIONS

6.1. Introduction

In the retail sector, it is important to enter into new markets with a correct plan and strategy. The expansion into new markets gives companies new challenges and unprecedented dynamics which contribute significantly to the company's growth. The expansion of business into international markets by companies may be prompted by many reasons, such as, saturation in the current operating countries given the number of stores opened, the need to explore a different market which will lead to new ideals that a business can work towards, the need to tackle new challenges and possible pure growth purposes to attain better margins and profitability. Thus, the expansion into new markets results in more business development that requires sustainable distribution systems and better processes that can help enhance efficiency and competitiveness in the new market.

6.2. Managerial Implications Recommendations

Entering into a new market requires a lot of understanding of the incumbent and intending consumers. The need is created in attracting new customers that can buy into your product. Hence, it is imperative that the needs of customers be considered from the production of goods and services up until the product is delivered to the customers. Products requested by the customers must be made available at the time they are needed to avoid losing loyal customers to competitors. The focus of this study was on how a varied retail business like Mr Price Group through providing better customer service and expanding to other African marketplace through better supply chain distribution system can make product availability a norm in its organisation. When all these are achieved, customers become satisfied. To use a centralised distribution system is good but supporting the structure with decentralized attributes then creates a hybrid systems approach. From the respondents views, there is a need for a good distribution system at Mr Price Group as this would allow for expansion into the African Marketplace. This expansion will assist in making products available to customers when required and more so there will be a consistent communication in the supply chain among the partners. A significant focus must be placed by management to ensure products are available when necessary and needed by customers.

From the statistical analysis, Ghana, Nigeria and Kenya are seen to be most ideal countries positioned for the expansion of the African marketplace distribution centres. The implication then is that human capital and skills must be given priority since they have the technical knowledge and understanding to perform the actual work and satisfy customers. However, land infrastructure availability, sourcing human capital skills which entail employees' training and the necessary laws and regulations of those countries must be considered before venturing into the expansion of businesses.

6.3.   Conclusion

In conclusion, Mr Price has been working well in the South African market and delivering on its promises to the South African market efficiently. With the expansion into the African market, it has been established in this study is discovered that the supply chain process which is affected by the lead time and dwelling time impacts negatively on the satisfaction of the customers. The customers have a wide variety of retailers to choose from. Hence, Mr Price needs to have the right product at the right place and at the right time to satisfy its customers. In this study, the study concludes by advancing an argument of the need for Africa to have distribution centres to serve the continent.

From the analysis, Kenya would be best suited to serve the East, with Nigeria servicing the West and South Africa will be the country that will serve the South. This will be aimed at increasing customer satisfaction by having the products available through using an efficient distribution system. The quality of service remains the key in every organisation which links product availability to customer satisfaction. Customer satisfaction as a driving force considers investment in human capital and technology as a vital component to the sustainability of Mr Price Group. There is a need to focus on the training and the development of the employees as this has the potential of improving productivity and efficiency of any organisation. It is notable, therefore, that although training and development are a costly process, they are nevertheless beneficial in the long run.

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APPENDIX A

Questionnaire

THIS QUESTIONNAIRE IS SEPARATED INTO TWO SECTIONS A AND B. PLEASE ANSWER THE FOLLOWING QUESTIONS BY CROSSING (_) THE RELEVANT BLOCK OR WRITING DOWN YOUR ANSWER IN THE SPACE PROVIDED.

Example of how to answer a questionnaire:

Your Gender?

Answer: If you are a male

MALE	
FEMALE	✗

Section A – Background information

This section of the questionnaire refers to background or biographical information. Although we are aware of the sensitivity of the questions in this section, the information will allow us to compare groups of respondents. Once again, we assure you that your response will remain anonymous. Your co-operation is appreciated.

1. Gender?

MALE	
FEMALE	

2. Age (yyyy/mm/dd)?

3. Ethnicity?

BLACK	
WHITE	
COLOURED	
INDIAN OR ASIAN	

4. Number of years in the retail Industry?

Below 10 years	
10 – 20 years	
21 – 30 years	
Above 31 years	

5. Occupational Level

EXECUTIVE	
MANAGEMENT	
SUPERVISOR	
OTHER	

6. Do you currently work at the Mr Price Group? If YES move to questions 7 and 8 and if NO move to question 9.

YES	
NO	

7. If yes, how long have you been working at the Mr Price Group?

Below 10 years	
10 – 20 years	
21 – 30 years	
Above 31 years	

8. How have you found working conditions to be at the Mr Price Group?

VERY GOOD	
GOOD	
MODERATE	
BAD	
VERY BAD	

Section B

This section of the questionnaire explores your views on the current situation of Mr Price Group.

9. Please answer according the rating. (strongly agree being the highest and strongly disagree being the lowest)

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Is there a need for a Distribution centre in Africa?					
Does the Distribution centre have necessary skills currently?					
Will the merchandise team be able to plan for international trade distribution centres?					
Will the introduction of distribution centres in Africa reduce pressure on the local Distribution centre?					
Should the distribution centre remain as it is is?					
Does the current distribution system delay product reaching Africa?					
Do you feel African customers are satisfied with the current product availability?					

10. Please select the country that would best service Africa.

KENYA	
GHANA	
NIGERIA	
DRC	
EGYPT	

11. Please select answers that makes the distribution centre most efficient? (May select more than one)

Supply chain process	
Skilled staff	
Technologically advanced	
Have enough capacity	
Less dwelling time	
Most effect customs services	

12. What are the downfalls of the distribution centre? (May select more than one)

Supply chain process	
Skilled staff	
Technologically advanced	
Have enough capacity	
Less dwelling time	
Most effect customs services	

13. How important is the following? (Rating = 4 – strongest and 1 – weakest)

	4	3	2	1
A strong working workforce				
An advanced supply chain system				
A strong management team				
Assigning a mentor to newly appoint staff				
Has enough room for ships to dock into and out the Port				
Minimising of dwelling time of ships waiting to dock into the Port				
Has the correct form of on-land transportation system to and from Ports				
Has enough resting time for workers				

14. Additional information to share in assisting the research?

_____

_____

_____

_____

_____

_____

Thank you for taking time to answer these questions in this questionnaire.

APPENDIX B

Frequency Distribution Tables

Section A: Background Information

Gender

		Frequency	Percent
Valid	Male	46	46.0
	Female	54	54.0
	Total	100	100.0

Age

		Frequency	Percent
Valid	18 - 24 Years	16	16.0
	25 - 31 Years	49	49.0
	32 - 38 Years	23	23.0
	39 - 45 Years	6	6.0
	46 And Above	2	2.0
	Total	96	96.0
Missing	System	4	4.0
Total		100	100.0

Ethnicity

		Frequency	Percent
Valid	Black	32	32.0
	White	29	29.0
	Coloured	16	16.0
	Indian or Asian	22	22.0
	Total	99	99.0
Missing	System	1	1.0
Total		100	100.0

No of Years in Retail Industry

		Frequency	Percent
Valid	Below 10 Years	69	69.0
	10 - 20 Years	22	22.0
	21 - 30 Years	8	8.0
	Above 31 Years	1	1.0
	Total	100	100.0

Occupational Level

		Frequency	Percent
Valid	Management	11	11.0
	Supervisor	10	10.0
	Other	78	78.0
	Total	99	99.0
Missing	System	1	1.0
Total		100	100.0

Working at Mr Price

		Frequency	Percent
Valid	Yes	97	97.0
	No	3	3.0
	Total	100	100.0

No of Years employed at Mr Price

		Frequency	Percent
Valid	Below 10 Years	87	87.0
	10 - 20 Years	10	10.0
	Total	97	97.0
Missing	System	3	3.0
Total		100	100.0

Level of Work Condition

		Frequency	Percent
Valid	Very Good	19	19.0
	Good	53	53.0
	Moderate	24	24.0
	Bad	1	1.0
	Total	97	97.0
Missing	System	3	3.0
Total		100	100.0

Need for Distribution centre in Africa

		Frequency	Percent
Valid	Disagree	5	5.0
	Neutral	9	9.0
	Agree	42	42.0
	Strongly Agree	43	43.0
	Total	99	99.0
Missing	System	1	1.0
Total		100	100.0

Skills in Distribution Centre

		Frequency	Percent
Valid	Strongly Disagree	1	1.0
	Disagree	10	10.0
	Neutral	26	26.0
	Agree	52	52.0
	Strongly Agree	10	10.0
	Total	99	99.0
Missing	System	1	1.0
Total		100	100.0

Merchandise Team Planning Skills

		Frequency	Percent
Valid	Disagree	8	8.0
	Neutral	33	33.0
	Agree	43	43.0
	Strongly Agree	15	15.0
	Total	99	99.0
Missing	System	1	1.0
Total		100	100.0

Pressure Reduction from Introducing Distribution centre

		Frequency	Percent
Valid	Disagree	5	5.0
	Neutral	12	12.0
	Agree	50	50.0
	Strongly Agree	32	32.0
	Total	99	99.0
Missing	System	1	1.0
Total		100	100.0

Current Distribution Centre

		Frequency	Percent
Valid	Strongly Disagree	11	11.0
	Disagree	52	52.0
	Neutral	25	25.0
	Agree	9	9.0
	Strongly Agree	2	2.0
	Total	99	99.0
Missing	System	1	1.0
Total		100	100.0

Current Distribution Centre Product Delay

		Frequency	Percent
Valid	Strongly Disagree	1	1.0
	Disagree	7	7.0
	Neutral	27	27.0
	Agree	37	37.0
	Strongly Agree	27	27.0
	Total	99	99.0
Missing	System	1	1.0
Total		100	100.0

Product Availability Satisfaction

		Frequency	Percent
Valid	Strongly Disagree	3	3.0
	Disagree	28	28.0
	Neutral	42	42.0
	Agree	21	21.0
	Strongly Agree	5	5.0
	Total	99	99.0
Missing	System	1	1.0
Total		100	100.0

Efficiency of Distribution Centre (SCP)

		Frequency	Percent
Valid	Supply Chain Process	78	78.0
Missing	System	22	22.0
Total		100	100.0

Efficiency of Distribution Centre (SS)

		Frequency	Percent
Valid	Skilled Staff	73	73.0
Missing	System	27	27.0
Total		100	100.0

Efficiency of Distribution Centre (TA)

		Frequency	Percent
Valid	Technologically Advanced	77	77.0
Missing	System	23	23.0
Total		100	100.0

Efficiency of Distribution Centre (HEC)

		Frequency	Percent
Valid	Have Enough Capacity	58	58.0
Missing	System	42	42.0
Total		100	100.0

Efficiency of Distribution Centre (LDT)

		Frequency	Percent
Valid	Less Dwelling Time	24	24.0
Missing	System	76	76.0
Total		100	100.0

Efficiency of Distribution Centre (MECS)

		Frequency	Percent
Valid	Most Effective Customs Service	27	27.0
Missing	System	73	73.0
Total		100	100.0

Downfalls of Distribution Centre (SCP)

		Frequency	Percent
Valid	Supply Chain Process	28	28.0
Missing	System	72	72.0
Total		100	100.0

Downfalls of Distribution Centre (SS)

		Frequency	Percent
Valid	Skilled Staff	29	29.0
Missing	System	71	71.0
Total		100	100.0

Downfalls of Distribution Centre (TA)

		Frequency	Percent
Valid	Technologically Advanced	46	46.0
Missing	System	54	54.0
Total		100	100.0

Downfalls of Distribution Centre (HEC)

		Frequency	Percent
Valid	Have Enough Capacity	57	57.0
Missing	System	43	43.0
Total		100	100.0

Downfalls of Distribution Centre (LDT)

		Frequency	Percent
Valid	Less Dwelling Time	29	29.0
Missing	System	71	71.0
Total		100	100.0

Downfalls of Distribution Centre (MECS)

		Frequency	Percent
Valid	Most Effective Customs Service	10	10.0
Missing	System	90	90.0
Total		100	100.0

Strong Workforce

		Frequency	Percent
Valid	Somewhat Weak	7	7.0
	Somewhat Strong	16	16.0
	Strongest	77	77.0
	Total	100	100.0

Advanced Supply Chain Systems

		Frequency	Percent
Valid	Somewhat Strong	16	16.0
	Strongest	84	84.0
	Total	100	100.0

Strong Management Team

		Frequency	Percent
Valid	Somewhat Weak	2	2.0
	Somewhat Strong	16	16.0
	Strongest	80	80.0
	Total	98	98.0
Missing	System	2	2.0
Total		100	100.0

New Staff Mentor

		Frequency	Percent
Valid	Weakest	4	4.0
	Somewhat Weak	9	9.0
	Somewhat Strong	34	34.0
	Strongest	53	53.0
	Total	100	100.0

Rooms for Docking

		Frequency	Percent
Valid	Weakest	3	3.0
	Somewhat Weak	12	12.0
	Somewhat Strong	34	34.0
	Strongest	51	51.0
	Total	100	100.0

Dwelling Time Minimisation

		Frequency	Percent
Valid	Weakest	1	1.0
	Somewhat Weak	8	8.0
	Somewhat Strong	33	33.0
	Strongest	56	56.0
	Total	98	98.0
Missing	System	2	2.0
Total		100	100.0

Transport System

		Frequency	Percent
Valid	Weakest	1	1.0
	Somewhat Weak	8	8.0
	Somewhat Strong	28	28.0
	Strongest	63	63.0
	Total	100	100.0

Enough Workers Rest Time

		Frequency	Percent
Valid	Weakest	4	4.0
	Somewhat Weak	17	17.0
	Somewhat Strong	30	30.0
	Strongest	49	49.0
	Total	100	100.0

APPENDIX C

English Specialist Report

Dr Elijah Mkhatshwa

B Th, BA (Hons) English, MA English (University of Natal), MA Linguistics, D Phil English & D Phil Linguistics (University of Zululand)

17 August 2017

TO WHOM IT MAY CONCERN

This serves to confirm that I have edited the Masters' dissertation whose details appear hereunder.

Title: Supply Chain Distribution systems towards African Marketplace: A Case of Mr Price

Student Name: Luvuyo Zolile Mthimkhulu

Student Number: 208506312

Institution: University of KwaZulu-Natal

SERVICES RENDERED

   (a) Reading and making editorial changes on the hard copy of the document.
   (b) Effecting changes on the electronic version of the document.

If need be, further information will be furnished upon request.

Yours faithfully,

Dr Elijah Mkhatshwa

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APPENDIX D

ETHICAL CLEARANCE

UNIVERSITY OF KWAZULU-NATAL

INYUVESI YAKWAZULU-NATALI

11 August 2016

Mr Luvuyo Zolile Mthimkhulu (208506312)
School of Management, IT & Governance
Westville Campus

Dear Mr Mthimkhulu,

Protocol reference number: HSS/1142/016M
Project title: Supply Chain Distribution system towards African Marketplace: A case of Mr Price

Full Approval – Expedited Application

In response to your application received on 27 July 2016, the Humanities & Social Sciences Research Ethics Committee has considered the abovementioned application and the protocol have been granted **FULL APPROVAL.**

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number.

PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

The ethical clearance certificate is only valid for a period of 3 years from the date of issue. Thereafter Recertification must be applied for on an annual basis.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

....
Dr Shenuka Singh (Chair)

/ms

Cc Supervisor: Dr TP Mbhele
Cc Academic Leader Research: Professor Brian McArthur
Cc School Administrator: Ms Angela Pearce