TOPIC: FACTORS AFFECTING SUPPLY CHAIN MANAGEMENT EFFECTIVENESS IN THE RETAIL SECTOR: THE CASE OF CHOPPIES BOTSWANA

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Declaration by student

This research entitled: FACTORS AFFECTING SUPPLY CHAIN MANAGEMENT EFFECTIVENESS IN THE RETAIL SECTOR: THE CASE OF CHOPPIES BOTSWANA is my original work and was never plagiarized from any work belonging to anyone.

Signed at Gaborone on this date of 18 th October 2019

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Executive Summary / Abstract

This research was based on the Choppies Supermarket in Gaborone, in Botswana. It focused on the effectiveness and efficiency of the Choppies supply chain. The research used the mixed methods research approach whereby both the quantitative and the qualitative approaches were applied. A sample of 52 ordinary employees was used for the quantitative approach while ten managers were interviewed to provide support for the questionnaire which was the dominant method for this research. The findings indicated that Choppies has some problems that impacted its efficiency and some recommendations were provided to assist Choppies Management to improve their efficiency and the effectiveness of their supply chain.

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Finally, I also thank I thank my family or all the support throughout this dissertation.

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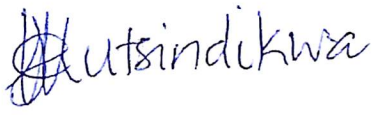
Further, I certify that the work is based on the investigation made, data collected and analyzed by her and it has not been submitted in any other University or Institution for award of any Degree. In my opinion it is fully adequate, in scope and utility, as a dissertation towards partial fulfillment for the award of degree of MBA.

Signature: 

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CHAPTER 1: INTRODUCTION AND BACKGROUND OF THE STUDY

1.1. Introduction

This study aims at examining the factors affecting supply chain management in the retail sectors in Botswana with particular reference to Choppies in Botswana. Supply chain management has emerged as a strategic aspect of businesses the world over for the achievement of economic and competitive advantage in a globalized world where competition is increasing daily (Ai-Chin et al 2010; Azadeh et al 2015). In contemporary business competition is no longer between businesses but between the supply chains of businesses, hence the need to go beyond individual businesses to look for sources of competitive advantage in supply chain issues as a whole. The competitive advantages of different supply chains are important in determining the success of individual businesses vis-à-vis each other in the hyper competitive business world of today. To achieve competitive advantage effective and efficient supply chains are required hence the aim of this research to study factors affecting supply chain efficiency at Choppies in Gaborone in Botswana. Supply chain management is not something simple for organizations to achieve hence the need to focus on it here. There are many factors that affect the effectiveness and efficiency of supply chains that are going to be looked at in this research.

1.2. Background to the study

Supply chain management is very important for any organization to succeed. Competition in business is no longer competition between or among organizations, but it is not competition between supply chains of the competing organizations. An organization with an integrated supply chain has no interruptions as it enhances inbound logistics, processing and outbound logistics to ensure that goods reach their intended customers. Properly integrated supply chains ensure that goods and services are pushed and pulled through the supply chain to satisfy customer demand and also to ensure that there is high turnover as customer consume goods supplied by organizations.

A supply chain has three major flows that make it more efficient. These three main flows that smoothen supply chains are the flow of materials and products. This entails that there is uninterrupted flow of products from suppliers to consumers. It also includes reverse logistics which is the flow of goods back to the organization. These goods may be in line with sustainable procurement best practices when packages that would otherwise cause pollution are sent back to the organization for recycling. Reverse logistics must be encouraged if it promotes sustainable procurement and supply. Reverse logistics could also include returns of faulty goods. Something that is not good for the organization as it indicates bad workmanship and there maybe need for costly reworking on the goods. In good supply chains there must be zero tolerance for defects and the need to get it right the first time. The second flow consists of the flow of information which might be information about delivery of goods and the need to update inventories for replenishment or restocking of goods. The last flow is the flow of money or finance which includes plans for payment, terms and schedules of selling on credit and terms of payment.

Many firms employ some complex computer software systems and they also utilize complex software application from web-based service providers so that they comprehensively enhance the optimization of supply chain management services. Further, there are two main kinds of supply chain management software. These are classified as planning software applications and execution software applications. Planning applications are concerned with determination of the optimum ways of fulfilling orders, while execution software focuses on tracking the freight's physical condition, materials management together with financial information that involves both the buyer and the seller and other parties involved.

At Choppies, as in many other organizations there is need for some applications for supporting data interchange both internally and externally. Choppies Supermarkets have been spreading throughout Botswana and the Southern Africa Development Community (SADC), the fifteen-member trading bloc in Southern Africa and there is need for essential data sharing and optimization of supply chain activities and get savings from supply chain integration. Besides the sharing of purchasing information and services data may need to be shared with suppliers on the upstream side and customers on the downstream side. Further, such applications have the capability to make the improvement of time-to-market of services and products and therefore

increasing purchasing cost-efficiency, and enhance better management and utilization of resources to produce responsive and agile supplies. Choppies as a growing organization has need for all these improvements

1.3. Problem statement

As business grow supply chains become increasingly complex and Choppies has been growing in Botswana and now has many branches all over the country. As branches have increased so has the complexity of managing Choppies supply chain which spills over the borders of Botswana into other nations such as South Africa, Zimbabwe, Namibia and other countries in the Southern Africa Development Community (SADC). The other problem is that there is a lot of competition from other supermarkets such as Pick and Pay, Spar, Payless, Sefalana and other smaller businesses in Botswana's highly deregulated market. This situation has forced most organizations to look to their supply chains as sources of solutions (for example elimination of waste and sustainable value addition along the supply chains) to leverage competitive advantage over competitors. Moreover, there is also the issue of globalization which has opened the Botswana market to many players who compete for the limited market, hence the need to turn to the need to improve the supply chain to gain competitive advantage in the market.

1.4. Purpose/need for the research

This research was prompted by the need to improve supply chain management not only for Choppies but for all businesses in Botswana so as to improve the value of products by players in the retail market. Such improvements are expected to lead to health competition, innovativeness, diversification and the provision of cheaper and high-quality products for the people of Botswana at the same time improving the bottom line of all players in the supply chains of the business. Thus, this research saw the need to make an impact that is far reaching in Botswana for general improvement of the provision of goods and services.

1.5. Research Objectives

The research shall be guided by the following objectives;

a) To determine the factors that affect supply chain management effectiveness at Choppies.

b) To explain how the factors, have an effect on the Supply Chain efficiency of the Choppies value chain system.
c) To find out the major challenges that impact supply chain effectiveness at Choppies.
d) To highlight and explain measures that can be used to improve supply chain management at Choppies.

1.6. Research questions

a) What are the factors that affect supply chain management effectiveness at Choppies in Gaborone?
b) How do these factors, have an effect on the Supply Chain efficiency of the Choppies value chain system?
c) What are the major challenges that impact supply chain effectiveness at Choppies in Gaborone?
d) What measures that can be used to improve supply chain management at Choppies in Gaborone?

1.7. Limitations

The research thesis execution was affected by a number of factors that limited its success and scope. These were as follows

a) The researcher is a full-time employee and had to find time to make sure that she completed this research in the best way possible in order to meet the required deadline by the university.
b) The issue of access to the respondents and discussants proved to be a challenge though not an insurmountable one. The retail industry is a very busy one and it was not easy to get permission to see the employees. Managers were not very cooperative initially because they were very busy and thought that the research would disturb the work at their business premises. Therefore, the researcher had to put a lot of effort to make sure that she obtained permission to do this research from the management of the Choppies supermarket chain.
c) There were language difficulties especially when dealing with lower level employee whose English was not that good and that meant that the researcher had to explain the

questionnaires a lot in order for then to understand, sometimes even resorting to vernacular language to explain all the necessary things.

1.8. Delimitation/Scope

This research had to adhere to a certain scope or delimitation for obvious practical reasons. It focused only on Choppies staff located in Gaborone although Choppies has may operations all over the Republic of Botswana. First, the research had a deadline hence there was need to limit its extent in a manner that made it possible for the researcher to meet her deadline at UPES. The other thing was that the researcher had limited resources hence the delimitation.

1.9. The rational for topic selection

This topic was selected for several reasons. First, supply chain management is a very important topic as it has great impact on profitability of an enterprise. Secondly the study of the supply chain would help to identify those challenges organizations face in their supply chain for them to improve. Thirdly, research on supply chain management is very low in Botswana and this research shall go a long way in expanding the body of knowledge in the field. Lastly supply chains keep transforming with the times and there is need to update managerial information on these.

1.10. Overview of the thesis

The thesis is structured into chapters as follows;

Chapter one introduced the research study. It provided the nature and scope of the research and the motivation the researcher had in carrying it out. The purpose of the research was highlighted, and it was to find out the factor that impacted supply chain efficiency at Choppies supermarket chain in Gaborone in Botswana. The research contained several aspects that illuminated or introduced the thesis such as the background of the research, the research problem and research purpose. The major research objectives and the research questions of this study were provided together with the limitations and delimitations.

Chapter two presented the literature related to the nature of supply chains and the factors that affected their efficiency and effectiveness. The definition of supply chain concepts were done to

illuminate the scope of the research and of the literature review. This was important for the operationalization of the research. In this chapter the factors that impact supply chain efficiency and subsequently it effectiveness were highlighted and presented from the perspectives of some authors on the field.

Chapter three focused on the research methodology used in this research. It dealt with areas such as the research design, the data collection methods that were applied in the research and also on issues of sampling. The research used the quantitative and qualitative research methodologies to obtain comprehensive information on the issues surrounding supply chain efficiency and effectiveness. The managers were interviewed on the issues surrounding both supply chain effectiveness and efficiency, while the employees were asked concerning supply chain efficiency. Issues of sampling were also explained in this chapter together with issues of research ethics applied by the researcher.

Chapter four presented the data analysis concerning this research. Quantitative data was analysed using the Statistical Package of the Social Sciences (SPSS) while the qualitative data was analyses in thematic form. The thematic format looked at emerging themes and these were presented in narratives of the managers.

Chapter five was dedicated to the interpretation of results that were acquired as looking at the data analysis contained in chapter 4. Here focus was on comparing what was in the literature with the findings of this research.

Chapter six focused on the recommendation of the action plans that could be adopted in order to ensure that Choppies as an organization had an effective and efficient supply chain. The were based on the conclusions that were reached by the researcher.

1.11. Chapter conclusions

The chapter mainly focused on introducing the research. It mainly presented the background to the research, the research problem and the purpose of the study. The chapter also focused on issues such as the research objectives and the corresponding research questions. The limitations that impacted this research were articulated, together with the delimitations that provided the scope of the research. Lastly, an overview of the research was presented to give a road map of the thesis and its scheduling and progression.

CHAPTER 2: LITERATURE REVIEW

2.1. Introduction

This section provides the literature review for the research. The literature review highlighted and described supply chain management focusing on the factors that affects its effectiveness and efficiency. The literature review concerned itself with what some authors have written about supply chain management with emphasis on factors that impact the supply chain. The chapter starts with the definitions of the key terms in the main topic so as to operationalize the research and also put it into proper perspective so that the researcher knew where to focus on in her research. After the definitions the researcher focused on reviewing the appropriate literature based on the research objectives and the research questions. This was to ensure that the literature is guided by the research objectives so that the researcher did not digress from the chosen aim and specific objectives of the research.

2.2. Defining a supply chain

At present there are several definitions of what a supply chain is. Various authors have defined the term "supply chain' in their own ways which are not very divergent though they may have different emphasis. The different definitions given by the various authors are provided here. Christopher (1998) has defined a supply chain as,

> "the network of organizations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hand of the ultimate customer."

Another definition provided by Ballou (2004) defines supply chain as focusing on all the activities that are focused on the transformation and flow of goods, services, and relevant flow of information emanating from the sources of the raw materials upstream of the supply chain to end users at the downstream end of the supply chain

According Borgstrom (n.d) citing Hertz (2001);

"The supply chain is defined here as a part of a network that supplies a specific product from raw material to final customer – it is a whole commercial chain embedded in the network (Hertz 2001) with a common objective of efficiency and effectiveness."

According to Pinto (2005:3) "Supply chain management: process of integrating, planning, sourcing, making and delivering product from raw material to end customer and measuring the results globally."

According to Klemencic (2006) the supply chain has an upstream and a downstream side both of which must be well managed for greater supply chain effectiveness.

According to Investopedia Supply chain management deals with the management of goods and services flow and also incorporates the processes for the transform raw materials into final products needed by the ultimate customers. It takes into account streamlining of the supply side of business's supply- oriented activities for the maximization of value to the final customers. Through that the firm would get a competitive advantage vis-à-vis other businesses in the market. Supply chain management is concerned with some efforts form the suppliers for the development and implementation of supply chains which would have a lot of efficiency and economy to a greater extent. Supply chains take into account all things including the production process and the development of new products and also the information systems that is required in the determination of the businesses.

2.2.1. Objectives of supply chain

The objectives of a supply chain can be looked at from two main dimensions. The first is to look at it from a functional viewpoint and the second form a business viewpoint. Functionally a supply chain has the objectives of achieving the five rights. These are, the right product, right price, right quality. Right quantity and the right place. From a business viewpoint, taking Pinto's (2005) view, there are several business objectives. The paramount business objective is the need to satisfy end customers at a profit. Pinto (2005:7) points out that supply chains have strong values connected to business profitability. Pinto (2005) goes on to argue that the source of revenue is the customer on the downstream side of the supply chain and the efficient flow of goods and services and value are

all critical to supply chains. Pinto (2005:7), lastly posits that the flows that are vital to supply chain success must be properly managed.

2.3. Defining supply chain effectiveness

Efficiency and effectiveness are very important in supply chain management (Pettersson 2008; Goedhals – Gerber 2017). Borgstrom further goes on to define effectiveness of an organization as the external standard of the manner in which an organization can adequately meet demands made upon it by its various stakeholders. Hence in supply chain management effectiveness is concerned with how well the organization is meeting the needs of members of its supply chain including its customers. It is concerned with doing the right things. Borgstrom goes on to argue that effectiveness can works well with efficiency where effectiveness is dependent on efficiency being achieved. This means that efficient organizations may not necessarily be effective in that they may be doing the wrong thing albeit properly. This is supported by Hakansson and Prenkert (2004) who argue that efficiency and effectiveness can be seen as having a one directional influence in which effectiveness depends on the efficiency of the organization not the other way round. According to Ibrahim and Hamid (2014) other issue that are critical to effective supply chain management include partnership with the supplier, outsourcing non-core activities, removing bottlenecks and the sharing or technology and information.

2.4. Defining efficiency

In the view of WordNet (2013), efficiency can be defined as in three ways that are conceptually synonymous. It is defined as - the ratio of the output to the input of any system--1 is a kind of ratio. They also define it as 'skillfulness in avoiding wasted time and effort' or 'economy'. Being economic simply means that in the world of resource scarcity that we live in today we need to use less resources or otherwise not waste any resources at all. The criteria used to define efficiency in this case are important in determining how an organization's supply chain would be able to optimize output and result in positive outcomes. It becomes clear that the maximization of supply chain efficiency would result in less loss of resources and problems such as idle time are minimized or eliminated altogether. The supply chain that operates efficiently is aware that time used in the supply chain has value.

2.5. Objectives of Supply Chain Management

Good supply chain management enhances the overall improvement of efficiency in organizational supply chains so that functional objective of the supply chain such as ensuring that goods are of the right quality, the right quantity, that they are of the right price, there are at the right place at the right time. This ensures that there is total supply chain integration and that there are no bottlenecks in the supply chain which can cause delays and disruptions to supplies. Well managed supply chains also result on cost reduction. This can be done through employing mitigation and resilient strategies which are commonly used in the hypermarket and retail businesses (Selvaraju and Beleya 2017). Recommendations for cost reduction include use of proper forecasting, knowledge management, strategic sourcing and procurement and fostering good supply chain relationships which can guarantee strategic supplies (Selvaraju and Beleya 2017). Other vital determinants of supply chain success also included the quest to introduce and uphold improved agility and flexibility. To enhance the supply chain better customer service is also a key consideration together with value chain optimization.

2.6. The Importance of Supply Chain

A supply chain considers account all the effort that is related to the making and delivery of a product and services from the supplier to the customers. Supply chain management incorporates a number of key elements that are considered important. These important things include the management of supply and demand so that the firm can optimizes what it supplies so that it does not order items that are either too little of too much. Ordering too many goods can result in higher costs of storage and associated problems such as stock obsolescence, pilfering, damage caused by such elements as pests and bad weather and having capital tied up in the goods. Supply chain is also important in that the organization can order the optimum number of raw materials and parts to avoid stock proliferation and sub optimization. Purchasing and supply is also vital the manufacturing and/or assembly of goods. Supply chain management ensures that there is adequate warehousing at convenient places in the supply chain. For example, there must be warehousing of in-bound raw materials and repair and maintenance items so that bottlenecks can be avoided in the process of manufacturing. In the supply chain there must the tracking of inventory so that the whereabouts of goods in transit can be ascertained. In supply chain management there must be order management so that the goods are in the right place at the right price and in the right quality

and quantity and the ensuring of the distribution of finished goods across multiple channels which ensures that the goods are timely delivered to the customer. Therefore, supply chain management plays a critical part and enterprise's success and the satisfaction of customers. The understanding and knowledge about supply chain management will be vital in ensuring that there are enough supplies. All businesses require some adequate inn order to trade in a healthy the organization utilizes the resources in the creation of products and services that consumers will be willing and able to pay for. This process is called the transformation process.

2.7. Factors affecting supply chain management

2.4.1. Idle Time in the Supply Chain

The concept of idle time has been the focus of many authors in the supply chain literature (Sarkar, Mukopadhay and Ghosh 2014, Chandra and Kumar 2000; Patil, Shrotri and Dandekar 2012). Idle time can cause wasted time (Goedhals-Gerber 2010). Good supply chain management has positive outcomes. It results in reduced delivery time (Ibrahim et al 2015).

Idle time refers to the waiting time, i.e., the time when machines or labour would not be working. It is an unproductive time that results in serious loss of business because the employees will receive pay for doing nothing and machines will be doing nothing even if they have been hired and the company is paying leasing fees. The other name for idle time is downtime as the work is held in that this period due to reasons like lack of machine maintenance, employee strike or shortage of raw materials.

When one looks at this definition it becomes apparent that the concept of idle time shows something that is harmful to the organization's efficiency and effectiveness and also negatively impacts the whole supply chain as employees will be doing nothing and there would be bottlenecks in the supply chain as a consequence of idle time. Therefore, it becomes clear that some measures should be taken to make so that there is the elimination of idle time from the supply chain because of the obvious disruptive tendencies.

Sarkar et al (2014) recommend that for supply chain efficiency to be promoted or restored there must be serious efforts to reduce idle time. According to Sarkar et al (2014) systems such as Six

Sigma have been employed by many organization to minimize and possibly eliminate idle time as it raises supply chain costs. Sarkar et al (2014) also recommend that there must be elimination of idle in terms of optimization in relation to costs. According to Sarkar et al (2014) the total elimination of idle time is not feasible but strategies can be adopted to minimize its impact.

2.4.2. Agility and flexibility of supply chain

The agility and flexibility of the supply chain has been viewed as very important for enhancing supply chain efficiency and effectiveness (Little 2014, Khan and Wisner 2019; Charles, Lauras, Wassenhove 2010; Somuyiwa, Adebayo and Akanbi 2011; Um 2015; Swafford, Ghosh and Murthy 2000; Gligor 2013; Khastoo, Dori and Raad 2017). Capability for flexibility is critical for effective response consumer demand (Little 2014). It has been argued that many firms in the retail and manufacturing sectors are confronted with demand that is very volatile very unpredictable because of increased global competition and shortened business cycles. For survival in the rapidly changing global business environment with its hyper competitiveness it has become imperative for organizations to improve their flexibility and agility (Little 2014). Levels of agility and flexibility need to take into account fluctuations in volumes, fluctuations in product mix and the lead time requirements of customers without compromise in unit cost. According to Little (2014) production and procurement managers should develop an in-depth understanding of how the need for agility and flexibility has escalated in the contemporary business world. By understanding customer demand the firm can achieve cost-reduction in diminishing inventory holding costs, including cost of obsolescence and adherence to reliable lead times for delivery of goods to the customers. Greater flexibility makes it possible for firms to penetrate markets more easily and more quickly (Little 2014; Charles et al 2010; Khastoo et al 2017).

2.4.3. Availability and utilization of infrastructure

The extant literature and business literature indicate that business productivity is different between nations at industry level. The observation from the literature concerning developing nations argues that inadequate infrastructure contributes to diminished levels of productivity (Yeaple & Golub, 2004). Infrastructure availability and proper utilization is related to effective supply chains (Goedhals Gerber 2010). Availability of uncongested, well planned, properly routed and

productive transport systems is vital for effective supply chain management (Goedhals Gerber 2010). If the interface of intermodal transport is not well managed delays happen in the supply chain (Esmaeillou et al 2017; Goedhals Gerber 2010).

The issues of power outages and poor systems of telecommunication coupled with inadequate transport infrastructure should all be seen as serious impediments to business investments, growth and contributes to poverty less developed nations of the world (World Bank, 2002).

Transport infrastructure translates into the long-term and fundamental economic capital of any city, regional enclave or nation and it has a fixed location. The transport infrastructure of a nation includes all its road networks, railway systems, inland waterways, sea ports, airports and air communication systems such as air traffic control systems and installations, air terminals and other installations (Banister & Berechman, 2003). Also, Kay (1993) points out that transport together with some other key infrastructure have some characteristics that are vital for supply chain management. Kay (1993) argues that these systems constitute networks that involve delivery systems which constitute considerable interfaces in service provision for individual customers.

Kay (1993) also points out that transport and other vital infrastructure form a small but very important aspect of the whole costs of in a whole range of products in which they are used and therefore losses which are the consequence of service failure are mostly quite large compared to the basic cost of the provision of services. Kay points out that considerable elements of expected monopoly are present and competitive infrastructure provision will become more costly, mostly in a prohibitive manner, not to the exclusion of competition in infrastructure utilization.

The Botswana government since independence has embarked in the development of an extensive rail and railway networks that among the most efficient in the SADC region and in Africa, especially for the transportation of bulk exports. In Botswana most raw materials are imported without many challenges and exports are also easily moved because of the enhancing transport infrastructure. Currently the Botswana government has plans to revamp the development of road and rail transport networks, something that is expected to enhance it's the supply of goods and services to and from Botswana.

Infrastructural capacity needs are determined by cargo forecasts. The capacity of any port terminal is constrained by the operation or function or operation with the lowest capacity. From the point of view of investment, it therefore is vital to make sure that a matching is determined in the capacity between the cargo handling system of a ship and transportation onwards (National Ports Authority, 2005). Marlow & Paixo (2002) concur when the outlined that modern ports need great agility for them to properly perform and also pointed out that the agility is only achievable through the availability of adequate infrastructure. According to Prater, Biehl & Smith (2001) agility can be defined as "the ability to be reliable in an uncertain and changing environment by being able to respond quickly to changes"). This view has the support of Clark, Dollar & Micco (2004) who also pointed to the view that onshore infrastructure has great importance and also that nations that had advanced infrastructure would have lowered port costs.

Schoeman (2007) in the study of the Republic of South Africa points out that one very important challenge in the South African consumer goods sector was associated with the poor state of roads and railways in south Africa. Schoeman has unearthed the fact that there are serious shortages in skills and that the use of assets is suboptimal. Schoeman also identifies some inefficiencies in processes causing a lot these inefficiencies (Schoeman, 2007). The study also discovered that serious challenges of inadequate infrastructure to connect supply chains with south Africa's growing informal small and micro enterprise sector. This limits the country's capability to for unemployment creation and poverty alleviation.

Saxton (2006) argues that the revamping of the South African internal and external logistics infrastructures and systems would be so important in a critical for the future of supply chains in the future, for South African and to ensure international competitiveness. However, Saxton (2006) points out that reengineering South African infrastructure should not be expected to be an easy one and while these improvement processes proceed the country and the companies must see how they reduce the logistics costs they encounter to ensure that they provide benefits such as lower prices for customers on the downstream side of the supply chain.

There are many situations that may cause supply chain disruptions to supply chains (Ittmann, 2007b). One of the major causes that there is insufficient infrastructure for the handling of demand within the supply chain. If there is rapid growth in the demand of a commodity, the capacity that

is there may not be able to handle increased demand can result in delays. If there is a fine balance between supply and demand sometimes, even that interruption that is relatively minor in the flow of goods may upset the supply and put it into a crisis, especially in the world markets. The potential that those kinds of problems can create vulnerability should be understood and companies must plan expeditiously in for them to overcome possible disruptions caused by insufficient capacity of infrastructure.

The presence of infrastructure, both physically and technologically, has a vital part to play in. The determination of overall supply chain efficiency. Inadequate infrastructure may lead to a congested supply chain which may also lead to delays, which would finally have the consequence of customer satisfaction and reduction in sales, while some possibility of infrastructural oversupply can have the consequence of causing some costs that are unnecessary in the supply chain. It may not be necessary to have more infrastructure for demand peaks as that can only cause infrastructure for all the other times when supply may be lower.
It is therefore very critical for the optimum capacity of supply of infrastructure to be determined and that could be achieved through the implementation of cost benefit analyses. According to parameters chosen for this study to measure efficiency in the whole supply chain, the availability of infrastructure should be measured taking into account its impact supply chain reliability, cost effectiveness and overall velocity of the supply chain.

Inadequate infrastructure definitely has great impact on the reliability of the supply chain as it will cause delays, while the infrastructure provided has fundamental negative impact on costs in the supply chain and excessive infrastructure that is provided willy definitely result in greater supply chain costs. Therefore, both elements should be measured in the determination of total supply chain efficiency.

2.4.4. Transport Productivity

Transport is a very important aspect of all supply so when and as a result the challenges that are experienced in the transportation sector are likely to have a considerable effect on overall supply chain efficiency. The issue of transport productivity is a challenge that a lot of supply chains in South Africa and the world over (Ittman 2007; Tseng, Yue and Taylor 2005). In South Africa the main things that cause low transport productivity range from the renowned congestion found in

the roads of South Africa. Other challenges pointed out by Ittman (2007b) include inefficient transport infrastructure and inadequate vehicle scheduling, poor route planning and poor skills of drivers. There are also other problems to be taken into account include and inept management of the relationship between the transport system and the supply chain.

According to Ittman (2007b) the fact the urban and national road network constitutes a serious challenge for the competitive of the combination of domestic and international logistics. There is also the serious effect of congestion, mostly affecting the urban roads infrastructure has a serious impact on the movement of freight movements, and the consequence of that has been a serious increase in the costs of logistics – something that greatly impacts costs of logistics.

Road freight transport vehicles mostly have to serve more long-distance routes where it would be more efficient as a transport mode. The fact that road freight vehicles in comparison with rail transport is more service effectiveness has been more that the higher price that is paid in using road transport instead of railway transport, according to Pienaar (2007). This is supported by Saxton (2006) who argues that the woes of South African logistics and the impact on supply chains are likely to worsen considerably ese conditions are expected to worsen in the short term to long term. Saxton points to the fact that to improve South African supply chains there is need to take active measures for the improvement of the railway transport of south Africa and that is expected to ease the congestion on the South African urban road transport networks. In that the supply chain will be improved.

The problem of inadequate vehicle scheduling and planning of routes is expected to cause considerable challenges in supply chains. Though such issues are likely to have less impact on bulk supply chains making use of railway transportation and covering the repeated routes in every trip, there can be considerable impact on such commodities as those in the pharmaceutical industry.

2.4.5. Technology for handling of freight

Stopford (2009) argues that the efficiency of goods handling is one of the key aspects of system design and says that the utilization of some high productivity goods handling equipment is expected to make a serious contribution for total efficiency of supply chains. The two major ways this contribution is realized include the lowering of unit costs through the elimination or removal

excess costs of handling and also the fact that it is expected to result in more rapid turnaround time, due the speed of loading which increase efficiency.

Efficient goods handling across the supply chain is thus expected to have a great impact on overall supply chain efficiency. The measurement of the supply chain's efficiency of handling goods is seen through the determination measure specifically for the handling of goods handling in a supply chain of similar nature either locally or globally and then making a comparison of the supply chain being looked into. As a result of the nature of goods handling, it becomes vital to incorporate the measure in taking into account both costs and overall supply chain efficiency.

2.4.6. Throughput, Lead Time and supply chain Utilization

Supply chain throughput measures the number of commodities passing through a particular supply chain during certain time period. Therefore is vital, in attempting to make improvements in supply chain speed in order to make sure that the throughput in a supply chain achieves the highest level of optimization possible. The level inside a supply chain having the slowest throughput, determines what the maximum throughput in an entire supply chain is, because the supply chain judged by the weakest link within it.

Like mentioned in the previous paragraphs the performance at ports was normally measured through making comparison of the actual throughput the its optimal throughput it has for a given time according to Talley (1994). The measurement should be used for each nodal point along the whole supply chain so as to make a determination of the efficiency of throughput efficiency of the function. The efficiency of the throughput should assist un the determination of supply chain overall efficiency especially taking supply chain speed.

The efficiency of supply chain throughput is affected by many other factors especially idle time, the number of breakages or the frequency of downtime in a supply chain and the prevalence of supply chain infrastructure. When the efficiency of throughput is greatly impacted by idle time and/or some sudden delays, in that case the efficiency of throughput needs to be used in the measurement of supply chain efficiency in reliability efficiency terms rather than efficiency in speed. Similar formulae should be utilized in both of these cases.

2.4.7. Interface configuration

Another key challenge problem in the case of supply chains might be a consequence of goods transfer of goods on an interface which is the place where goods transfer happens between node on their own and between any two links. Things can get rather complicated when the product in transit moved has high perishability and might have the risk of getting spoiled when there are bottlenecks in the supply chain. It is thus vital to have some minimization of all potential challenges that might occur at the interface so that the supply chain can efficiently function.

2.4.8. Satisfaction of customers

Many definitions of customer satisfaction are littered throughout the extant literature. Strategies (2006) describes customer satisfaction it as a degree to which a particular product or service can meet the expectations of the customer. Other authors such Beech and Chadwick (2009) defined customer satisfaction as the comparison of expectations compared with customer perception of the experience.

In many organizations only a few employees establish direct links or interface with their external customers, but the problem is that there is no employee in the organization that does not work to ensure that their customers are satisfied. It must be known that the work of all employees, regardless of their station has impact on customer satisfaction.

The other thing is that for the attainment of excellent customer satisfaction levels, internal customer relationships have a vital part to play. There is need to for the measurement satisfaction as satisfied internal customers would also result in high external customer satisfaction. According to Swinehart and Smith (2005) if customer service staff is able to provide excellent customer service to external customers is dependent on whether internal customer service which is the supply-side is efficient. Ittmann et al. (2007) concurs with that view. They discovered that if there is a dearth in skills and lack of capability of organizations to satisfy customers is fast-moving consumer goods supply chains. If there is no customer satisfaction, the demand for a company's products goes down or even disappears under extreme circumstances as customers switch allegiance.

Research has discovered that customer satisfaction is related to customer loyalty. According to Ellinger et al (1998) indicate that when customers have excellent customer satisfaction there is also greater customer loyalty compared to when the level of customer service is found wanting. Therefore, it should be clear that elevated levels of customer satisfaction results in organizational success. According to Read & Miller (1990) excellent customer satisfaction is a reliable determinant of supply chain efficiency.

2.4.9. Workforce adequacy and skill

If employees are not satisfied as internal customers are not satisfied it would be hard to satisfy external customers (Goedhals Gerber 2010; Esmaeillou et al 2017). In effective supply chains labour must be well trained, in right numbers, skilled and motivated (Esmaeillou et al 2017; Goedhals Gerber 2010). Making supply chains more efficient actually depends on human resources – people. People are the most critical aspect of any supply chain. It therefore becomes vitally important that the supply chain is manned with properly trained people that are dedicated to their work and that leads to the maximization of supply chain efficiency and effectiveness. It has been noted with serious concern that lack of adequate productivity of labour is a critical issue the world over mostly in less developed countries (LDCs).

According Tongzon, (1995).For transport terminals one single factor determining their efficiency and effectiveness is the human resources quality that these terminals employ For the measurement of the real effectiveness of labour efficiency in a supply chain, a number should be considered especially the adequacy of personnel in terms of numbers, the capacity of the personnel in terms of the skills that they possess, the average weekly hours worked by the human resources and the employees average age. All the aforementioned factors are important in measuring supply chain efficiency which results in cost efficiency in the supply chain. Employee numbers determines the costs of a supply chain. The skills that employees have also greatly impact the efficiency of the supply chain. Conditions of work such as the number of hours worked per week are vital in the determination of whether it would be justified for the organization to pay overtime taking into account that paying employees overtime makes employees more costly compared to employees doing normal working hours making such an arrangement inefficient.

2.4.10. Communication throughout the Supply Chain

Communications in supply chains give life to them (Esmaeillou et al 2017; Goedhals Gerber 2010). In most retail and manufacturing organizations, managers faced challenges of the need to make decisions on time – which is called real time decision-making. When decisions are poor and slower, companies are likely to have problems of loss of important customers. Lack of timely decision-making causes serious risks of possible penalties from vital suppliers, whom they may lose if they are not careful. Poor communication may lead to wrong decisions. To avoid such occurrences all organizations in the supply chain must have proper communication of the right decisions and in order to make the correct decisions it is vital to understand that managers in the concerned organization must have proper information which would be accessible to all managers who are the positions for decision-making. The information should be well processed and accurate for it to lead to efficient decision-making in the supply chain.

Nowadays most supply chains are dominated by the use of information and communication technologies (ICT) which have led to the transformation of supply chains and these have enhanced the development of very efficient systems such as electronic data interchange (EDI) which enhance the exchange of ordering information between the buyer and supplier organizations and make high levels of coordination possible. The usage of ICT has also led to serious improvements and cost savings as the organizations will be able to order exactly what they need, without excess that may need to be stored and thus creating inventory costs which is called Just-in-time systems (JIT). The problems could be those like obsolescence, possible pilfering, damage and other vices associated with storage of goods. Just-in-Time systems are dependent on efficient communication between purchasers and suppliers leading to agile or flexible supply systems that lead in turn to lean inventory and more efficiency in the supply chain something that makes the supply chain more competitive in the hypercompetitive world of business today. According to Ghayur (2003) these technologies use the internet to enhance communication and the enhance the usage of e-supply chain whereby the organization orders goods and expedite and so on through the supply chain. These systems enhance faster ordering and order fulfilment between organizations. Electronic systems also make possible the tracking of goods throughout the supply chain. There is vitality in

that communications must allow communication that is seamless communication and allow the sharing of information in the whole supply chain and in the organization itself.

2.4.11. Safety of goods throughout the supply chain

The safety of good in the whole supply chain is a very vital aspect that affects supply chain efficiency. The amount of pilfering and damages to goods are critical to success of supply chain management (Goedhals Gerber 2010). Many mishaps and challenges affect goods in the supply chain. For us to know the level of efficiency in each supply chain we should know the degree to which materials or goods are at the risk of being stolen, damaged or even destroyed throughout various stages of the supply chain. These could be calculated as a percentage of goods that move through a particular supply chain. When customers receive damaged or deformed goods that are not suitable for the intended purpose might have to be returned to the supplier – which is a cost in the supply chain and that lead to inefficiency and cause problems such as bottlenecks.

Bottlenecks are shortages in the supply chain which affect the process of manufacturing in the case of those organizations involved in manufacturing. The consequence of such bottlenecks is that the final customer in the downstream parts of the supply chain create shortages for customers and the problem might be that customers will switch to the competitors. those goods that are damaged may have to be returned to the supplier. The fact that there is reverse logistics whereby goods are returned to the supplier are very expensive and result in serious costs. For the supply chain to be efficient the goods must be received by the buyer organization in pristine form especially in the in case of perishable goods which need special attention as they move throughout the supply chain they should. Problems of poor supply can be costly to if customer satisfaction is compromised.

2.4.12. Cargo flow discrepancies

If there are some discrepancies or Imbalances in the flow of cargo this results in more obstacles or challenges in the flow of goods in the supply chain towards the final consumer. This occurs when the difference between goods flowing in different directions is grossly mismatched with one direction having more goods flowing towards it then the other. When that happens there is a serious

wastage in terms of fuel and the use of the transport vehicles as they have to have unproductive return trips as the trucks or railway trucks, or ships would be empty on their return journeys. In that case the transport costs may be too exorbitant.

2.4.13. Supply chain optimization

According to Walasek (2016) in the ever-complex field of globalized supply chains and logistics organization need to build complex supply chains globally. Under these conditions supply chain optimization becomes a key issue for the achievement of competitive advantage. Optimization refers to the way organizations can try to improve or maximize benefits from their supply chains. According to Walasek (2016) most organizations focus on ways of supply chain optimization. The first are savings on time and minimization of costs and supply chain optimization results in competitive advantage. Effective supply chain has the result greater cost reduction (Borgstrom n.d; Ibrahim et al) and more customer satisfaction (Ai-Chin et al 2010; Borgstrom n.d.; Ibrahim et al 2015). Walasek (2016) also argues that organizations can also optimize through supply chain extension and the creation of logistics networks with a high degree of complexity.

Another way of supply chain optimization is through the coordination of members of the supply chain. Walasek (2016) also argues that optimization in modern organizations' supply chains can be achieved through the harnessing of information technology to enhance decision-making processes, scheduling of materials, supply planning and stock monitoring within supply chains. Others such as Ai Chin et al (2010) and Esmaeillou et al 2017), also support the importance of ICT and adoption of enterprise resource planning (Esmaeillou et al 2017), knowledge management, financial management, globalization (Esmaeillou et al 2017). Pereira (2009) supports the other authors such as Walasek (2016) on the issue of harnessing ICT as a way of optimization. s Others have recommended the use of information sharing to address supply chain challenges (Ryu et al 2009). Bayraktar et al. (2009) talk of the importance of closer supplier relationships in resolving challenges affecting supply chains. Baily and Farmer (2000) also gave the same recommendations. Using Just-in-time (JIT) systems was recommended as a panacea for achieving lean and agile supply chains by some authors (Nyanchoka 2017). For better optimization there should be

coordination of supply, production, logistics and distribution with some pushing and pulling in the supply chain (Walasek 2016).

The other important element for optimization is collaboration with suppliers or having good relationships with suppliers. Relationships among supply chain members are very important (Mehmeti, Musabelliu and Xhoxhi 2016). Top management support for supply chain management is important (Mehmeti et al 2016). Hudnurkar, Jakhar and Rathod (2104) talk of the need for supply chain collaboration as a key determinant of success. High trust levels are also expected outcomes of effective supply chain management (Ibrahim et al) and greater coordination among supply chain members (Ibrahim et al 2015). Crook et al. (2008) argue that if there is collaboration among independent firms there is constructive knowledge sharing for the achievement of competitive advantage well beyond that they can achieve if there was no such collaboration

2.4.14. Supply chain documentation

Documentation is a very important part of the supply chain. There must be adequate documentation to enhance success of the supply chain (Goedhals Gerber 2010). Freight movement within the supply chain needs detailed and extensive documentation to accompany it. According to Fourie (2002) because of its extensiveness document flow could be equated to a supply chain on its own. There differing regulations for the importation of goods for each nation on the planet which makes it imperative for exporter to have a great understanding of the kind and nature of documentation required.

If their documentation is not adequate the goods might not be able to move efficiently through the supply chain and that can lead to the rising of costs of logistics and delays can lead to customer disappointments and eventually to customers switching to other product or service providers, yet customers are an organization's most important asset. Therefore, it should be clear that poor documentation can lead to supply chain inefficiency.

2.5. Challenges encountered in supply chains

Challenges encountered by supply chains that cause ineffectiveness. Hamza et al (2016) raise the issue of poor procurement performance as the problem. There is also talk of challenges such as the delay of delivery of goods (Hamza et al 2014). Hamza et al (2009) have also talked of problems of increase in defects and the delivery of poor quality goods or lack of delivery as key challenges. There have been challenges of outmoded systems and procedures, untrained staff, lack of coordination of procurement activities, lack of adoption of e-procurement systems and poor quality ssurance policies and poor regulations (Juma, 2010). Failure to create quality assurance models has been raised as on key challenge (Migai 2010). Other authors recommend using specialized transport systems (Nyanchoka 2017). Researchers argue of the importance of procurement planning (Hamza. Gerbi and Ali 2016).

2.6. Chapter Conclusions

This chapter presented the literature review on factors affecting the efficiency and effectiveness of supply chains. This was to illuminate the topic and provide some insights and perspectives on the matter so that the author could be guided in the process of understanding the field more broadly and to provide a basis for the creation of the research instruments. The factors that were focused on were the issues of idle time, supply chain agility, infrastructural elements and the issue of transportation efficiency and productivity. Other elements that affect supply chains that were discussed included the issues of lead time, throughput and the utilization of supply chains. The chapter also highlighted and discussed issues such as customer satisfaction, the nature of the workforce, the quality of communication, the level of freight safety and discrepancies in cargo flow. Lastly the chapter focused on the aspects of supply chain optimization and supply chain documentation.

CHAPTER 3: RESEARCH METHODOLOGY

3.1. Introduction

This chapter highlights and explains the research methodology that was employed in this research study. The concept of methodology must not confused for research methods. Research methodology refers to the logic or beliefs that guide how knowledge is gathered or obtained. In the view of Teddlie and Tashakkori (2009) research methodology is mostly focused on the logic of inquiry or the approach to research. The research methodology was guided by the need to gain better understanding of the topic of the factors that affect supply chain efficiency and effectiveness and ho0w they do so. The methodology was chosen based on the philosophy or worldview of the researcher that both views of management and employees had to be understood and the nature of the issue that was being researched. The two major worldviews in research are the positivist world view using mainly quantitative methods and premised on orientation towards the deductive logic and the constructivist world view premised mainly on the use qualitative methods and mainly based on the use of inductive logic. The objective of the methodology chapter was to illuminate the readers on the main philosophy behind the research methods choice that were adopted by the researcher in this case. This chapter include issues such as those of sampling, methods of data collection methods and elements of ethical issues that apply to this research.

3.2. The research design – the mixed methods design

The mixed method research design is going to be used in this research study (Teddlie and Tashakkori 2009; Creswell and Plano Clark 2011; Onwuegbuzie and Leech 2006; Onwuegbuzie and Collins 2007; Hesse-Biber. According to Teddlie and Tashakkori (2009) the mixed methods research is referred to as the 'the third' research philosophy now operating besides the older methods – the quantitative and qualitative research approaches. In the view of Tashakkori and Creswell (2007) the mixed method design is defined as study in which both qualitative and quantitative research methods are used in all stages of a single research – gathering of data, sorting, analysing, integrating and interpretation. Onwuegbuzie and Leech (2006) put the following argument about mixed method research;

"…. involves collecting, analysing and interpreting quantitative and qualitative data in a single study or in a series of studies that investigate the same underlying phenomenon".

3.2.1. The qualitative approach

The qualitative approach collects, analyses and interprets qualitative data which deals with the opinions, belies, attitudes and feelings of respondents Which are not quantifiable, on a certain issue (Mack, Woodsong, MacQueen, Guest and Namey 2005:2). The qualitative approach shall use interviews to collect data on supply chain management from management people at Choppies. Thematic data analysis shall be used to analyse interview data from the managers of Choppies.

3.2.2. The quantitative approach

For employees who are many in number compared to the managers, the quantitative data analysis shall be used. This quantitative approach is positivist and believes that reality exist independent of the individuals and that figures tell the truth (what gets measured matters). This will use a questionnaire that is essentially structured. The employees are more in number than the managers and the questionnaire shall be structured and seek factual data which shall be collected, sorted, analysed and interpreted using statistical methods.

3.3.3. The philosophical worldview of mixed methods design

The philosophical paradigm or worldview that will guide this research shall be the pragmatic paradigm or worldview (Creswell, Plano Clark, Gutman and Hanson 2003; Onwuegbuzie and Leech 2006; Tashakkori and Creswell 2007; Onwuegbuzie and Collins 2007; Teddlie and Tashakkori 2009; Hesse-Biber 2010; Creswell and Plano Clark 2011). According to the pragmatic worldview both the quantitative and qualitative approaches can be applied in suitable places. It allows the researcher to approach the research problem in different ways in the same study.

3.3.4. Justification for employing the mixed methods methodology

The justification of the usage of mixed methods research is the complexity of the issue of supply chain management is seen differently from the perspective of management and employees. Managers need to make in-depth explanations of policies, procedures and systems, hence the use of in-depth interviews for them. Besides, managers are too few for viable quantitative analysis. However, on the other hands employees are too many for interview and are unlikely to have in-depth information on why certain policies are made and implemented, and they can present factual information.

The purposes of mixing the methods is for management data to complement employee data by providing the perspective of management on the matter. The logic of inquiry is that both employee and management data can explain the supply chain issues in the organization. Complementarily, and other issues such as triangulation have been used as justifications for using the mixed methods research approach.

3.5. Sampling Issues

The sample shall be chosen from the population that is targeted by the researcher. Kumar (1996) describes a in research as a set of all the elements that the researcher wishes to study. In this case the population shall be all employees and management at Choppies, Botswana.

3.5.1. The Sample

A sample can be defined as the subset of the population chosen by the researcher to focus on instead of the whole population. According to Leedy (1993:27) a sample is defined as "...a portion of the overall population that one wishes to study." This is done because the researcher needs to focus limited resources on a smaller representative subset of the population hoping that accurate measurements will be obtained on the issue. Kumar (1996) argues that sampling is about the selection of a smaller number of respondents (called the sample) obtained from the larger group (the population) which will be the basis for the estimation or prediction of facts, situations or outcomes concerning the population.

3.5.2. Sample size

The researcher shall use 80 respondents in her quantitative segment and administer the questionnaire to them to obtain data. These will be selected using probability sampling (applying random sampling from different departments dealing with issues to do with supply chain management at Choppies). Three managers shall be chosen using purposive sampling. They shall be selected on the basis of having worked with departments that have something to do with supply chain management and related issues and having been in the organization for at least more than one year. The rationale such a move is that such managers have enough understanding of Choppies supply chain issues to offer in-depth information to the researcher on factors that affect supply chain management in their organization.

3.6. Main Data sources

The main data source for this research shall be primary data from interviews and questionnaires. However, there shall be secondary data to guide the researcher in instrument formulation in he form of the literature review that derives information form journals, textbooks, magazines, newspapers, company records, the internet government records and so on.

3.7. Data Collection methods

In this research the intention of the researcher is to use two methods of primary data collection. The key method or leading method shall be the quantitative method (represented by the questionnaire). The second and supporting method shall be interview.

3.7.1. The research tools

The researcher shall use two main tools in the collection of data from the two groups of respondents targeted by this research. For managers the researcher shall use the interview guide which is a set of questions that the researcher intends to ask the managers. These will be relatively less structured and designed to gather narrative data from the mangers.

For the employees the questionnaire tool shall be used and shall be structured to provide statistical data. The questions will be rigid and similar for the purpose of greater validity. guide and the questionnaire.

3.7.2. Primary Data collection

Primary data is data collected for the purpose of solving the current problem at hand (Saunders 2000). This thesis shall mostly depend on primary data collection. In this study, the major method to be employed shall be the in - depth interviews. Questions for this shall derive from the questionnaire in the first phase.

On the issue of analysis, quantitative data shall be analysed using the Statistical Package for the Social Sciences (SPSS). Qualitative data shall be analysed using thematic analysis where emerging themes from the managers shall be recorded, transcribed and interpreted (Creswell et al 2011).

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3.8. Ethical Considerations

3.8.1. Ethical approval and research permit

The researcher obtained formal approval to conduct the research from University. The obtaining of the permission was done quite earlier before the data collection exercise was done to get the requisite approval. Permission was also sought and obtained from the Choppies management well in advance of the commencement of the research especially the fieldwork. .

3.8.2. Confidentiality

The researcher promised to keep the personal information provided by the respondents confidential, except in the case where express approval was provided by the respondents. For the sake of confidentiality, the real names of the respondents were not sought and active measures were taken to keep the personal data of the respondents confidential as per research ethical requirements. The researcher decided not the real names of the respondents but to use pseudo

names or colloquil names to protect he respondents' confidentiality. This helped to adequately conceal the true identities of the respondents.

3.8.3. Informed Consent

The consent of the respondents was sought and the researcher sought agreement of the respondents to be interviewed or subjected to the questionnaire. All the relevant authorities concerning his research were obtained and managers were informed about the research before it commenced and the full nature of the research and its aims were obtained from management as required by the research ethical code taking cognisance of the right and privileges of the respondents. The fact that the respondents were all over the 1ge of 18 or age of consent to be interviewed or subjected to the questionnaire were taken into account in this research. There was emphasis on the fact that participation in the research was no coerced but entirely voluntary. The respondents were informed on the purpose of the research and were informed of their rights to terminate participation of they felt uncomfortable or to say that they were not feeling comfortable with certain questions. The respondents were informed about their right to ask questions if they felt like doing so on issues where some clarifications were needed.

3.8.4. Availability of debriefing and additional information

The researcher had to disclose the purpose of her research to the respondents and the gatekeepers of information in a manner that did not appear to compromise the respondents' confidential status and those of related stakeholders. The respondents were allowed to ask questions they were concerned about and the researcher was also obliged to provide answers.

3.9. Chapter summary

In this chapter the research design was presented and the research approaches which were used in this research. In the chapter initially the research design was presented to indicate the direction and approaches that the researcher adopted as a plan. The purpose and rationale of using both the qualitative and quantitative research methodologies were provided. The chapter also gave the

rationale for the utilization of the mixed methods approach using both interviews and the questionnaire. The recommendation was that the quantitative method was the main approach supported by the qualitative methodology. Managers provided in depth information from interviews and employees provided questionnaire responses that did not have much depth but many employees were given the questionnaire in order to get reliable data from the questionnaire. Sampling issues were highlighted and explained in this chapter. Purposive sampling was employed for the managers focusing on managers dealing with or mostly affected by supply chain efficiency or inefficiency. The population that the research was concerned about was employees at Choppies supermarkets. The key aspects of sampling taking into account the sampling methods chosen are presented and discussed in this chapter. The way data analysis was done and was also presented here. In this study the ethical issues affecting this research were discussed.

CHAPTER 4 ANALYSIS:

4.1. Introduction

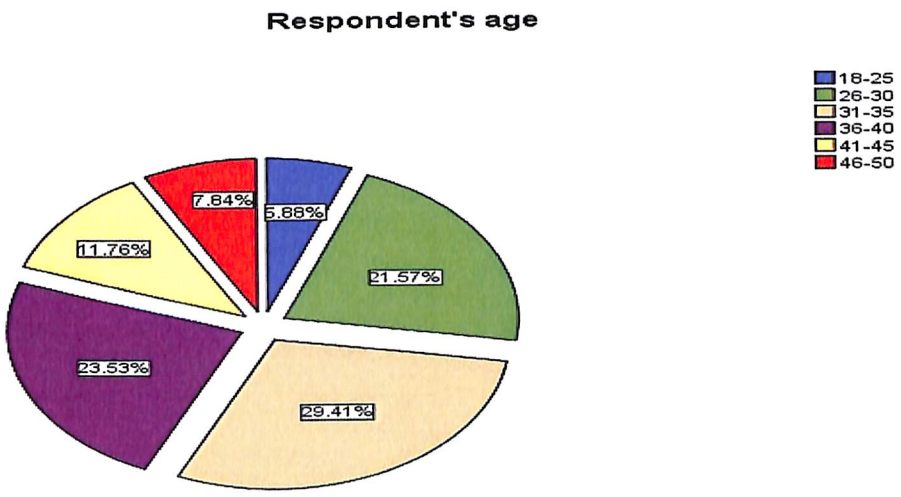
In this chapter that data that was collected during the study was analyzed. There is that data that was collected from the managers which was mainly qualitative. That data is analyzed thematically in this chapter. Then there is the quantitative data that was collected for the employees and which is the main data. It is also analyzed in this chapter. The quantitative data was presented in the form of tables, graphs and pie charts.

4.2. Data presentation and analysis

4.2.1. Respondents' demographic data

This section presents and analyses the demographic data of the respondents. It focuses on pertinent issues such as the age of the respondents, the gender or sex of the respondents, the level of job experience of the respondents and their education level.

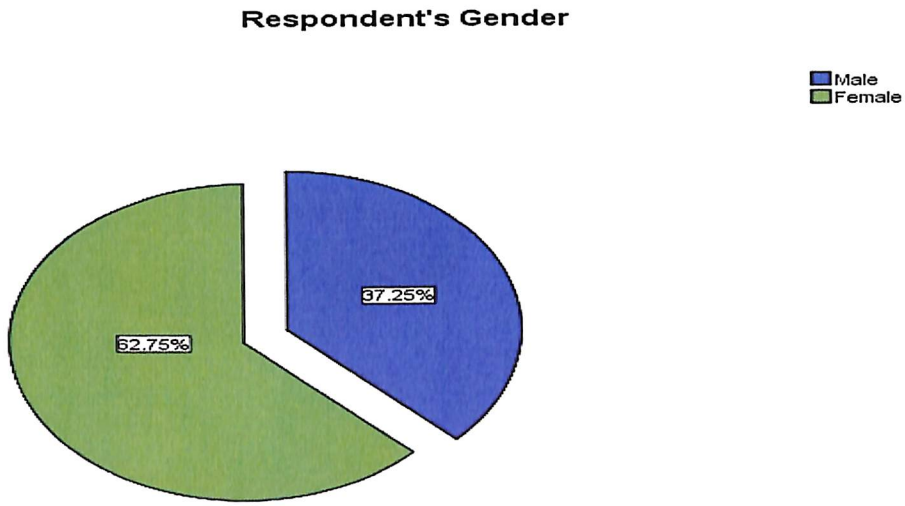
Figure 1: Age of the respondents



n=51

There were 29.41% of the respondents that were aged between 31 and 35 years. Of the respondents 23.53% were aged between 36 and 40 year. Those aged between 26 and 30 years constituted about 21.57%. there were 11.76% of the respondents that were aged between 41 and 45 years. About 7.84% of the respondents were aged between 46 and 50 years. Lastly those aged between 18 and 25 years constituted 5.88% of the respondents.

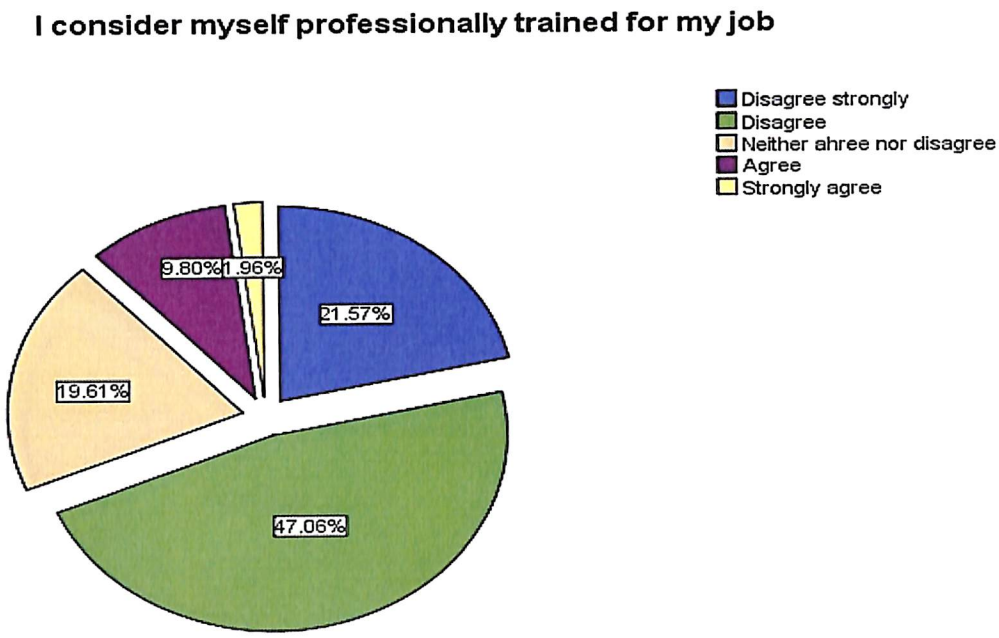
Figure 2: Gender of the respondents



n=51

The findings indicate that the majority of the respondents were female employees. They constituted 62.75% of the respondents. The males were in the minority at 37.25% of the total number of respondents that answered the questionnaire.

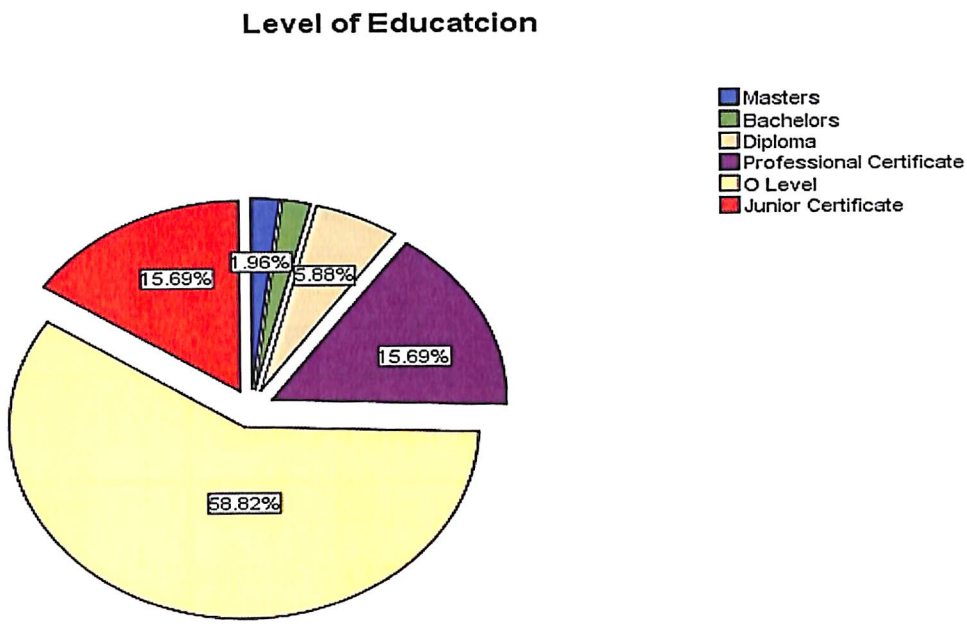
Figure 3: Whether respondents considered themselves professionally trained



n=51

There were 47.06% of the respondents that disagreed with the assertion that they considered themselves professionally trained for the jobs that they were currently performing. About 21.57% of the respondents strongly disagreed with the assertion. 19.61% of the respondents neither agreed nor disagreed with the assertion. About 9.8% of the respondents agreed that they were professionally trained for the jobs that they were currently occupying while only 1.96% of the respondents agreed strongly with the assertion.

Figure 4: Respondents education level



n=51

In terms of their education level, the majority of the respondents who were employees had Ordinary Level (O level) qualifications. There were 15.69% of the respondents that had professional certificates. About 15.69% of the respondents had lower Junior Certificate qualifications. There were 1.96% of the respondents that had Masters' qualifications, while another 1.96% of the respondents had Bachelors' degrees.

4.2.2. Issues on supply chain efficiency and effectiveness

This section presents pertinent issues that have something to do with the effectiveness and efficiency of the supply chain of Choppies as an organisation as discovered form the findings after the questionnaire was administered on 51 employees of Choppies.

Table 1: Whether idle time is a problem in the Choppies supply chain

Idle time is a problem in the Choppies supply chain

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	2	3.9	3.9	3.9
	disagree	7	13.7	13.7	17.6
	neither agree nor disagree	7	13.7	13.7	31.4
	agree	19	37.3	37.3	68.6
	Strongly agree	16	31.4	31.4	100.0
	Total	51	100.0	100.0	

n=51

There were 37.3% of the respondents that agreed that idle time was a problem in the Choppies supply chain while 31.34% agreed strongly with the assertion. That means that a total of 68.7% of the respondents generally concurred with the assertion of idle time as being a challenge that affected the Choppies supply chain. There were 13.7% of the respondents that neither agreed nor disagreed with the view that there was a problem of idle time at Choppies. Those that disagreed were 13.7% of the respondents disagreed with the assertion and 3.9% strongly agreed. That means that there were a total of 17.6% of the respondents did not agree with the assertion that there was the problem idle time in the Choppies supply chain.

Table 2: Whether Choppies supply chain was good

The supply chain infrastructure for Choppies Supply Chain is good.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	19	37.3	37.3	37.3
	Disagree	17	33.3	33.3	70.6
	Neither agree nor disagree	9	17.6	17.6	88.2
	agree	4	7.8	7.8	96.1
	strongly agree	2	3.9	3.9	100.0
	Total	51	100.0	100.0	

n=51

The findings show that there were 37.3% of the respondents that strongly disagreed that the Choppies supply chain was good while 33.33% of the respondents disagreed with the assertion. That means the 70.6% of the respondents did not agree with the view that Choppies had and adequate supply chain infrastructure. There were about 17.6% of the respondents that neither agreed nor disagreed. There were only about 7.8% that agreed and 3.9% that agreed strongly.

Table 3: Whether Materials management is properly executed

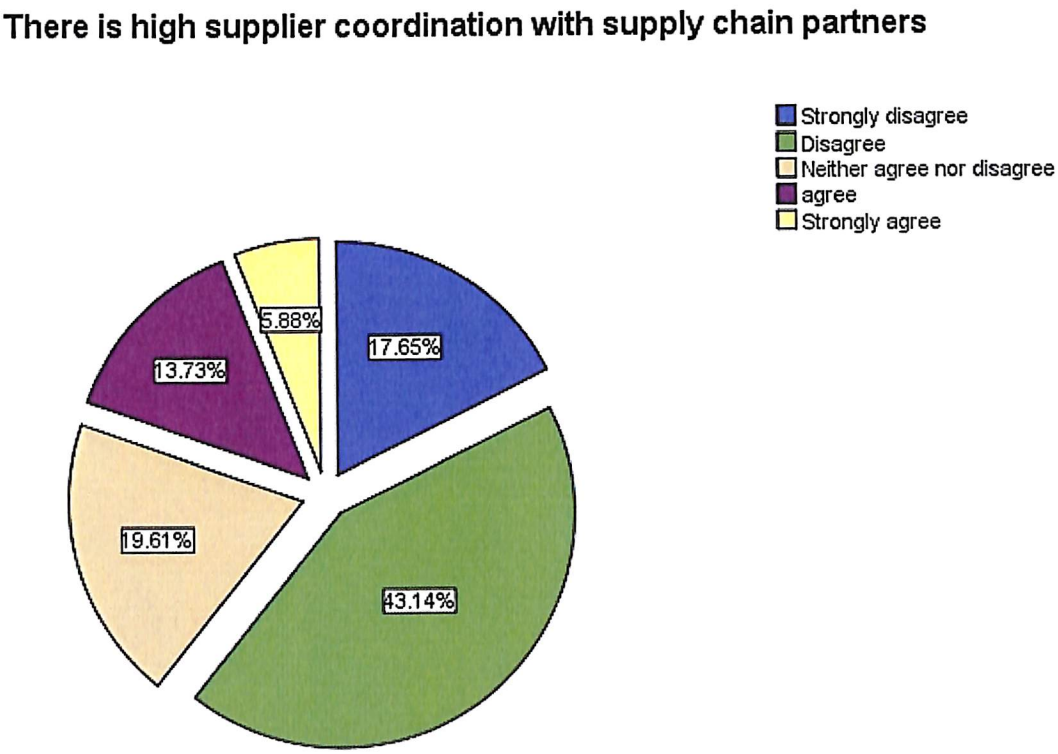
Materials handling is well done

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	17	33.3	33.3	33.3
	Disagree	10	19.6	19.6	52.9
	Neither agree nor disagree	12	23.5	23.5	76.5
	agree	6	11.8	11.8	88.2
	strongly agree	6	11.8	11.8	100.0
	Total	51	100.0	100.0	

n=51

The findings indicate that most of the respondents strongly disagreed that materials management was properly executed (about 33.3%). There were 19.6% of the respondents that disagreed with the assertion. This made the number that opposed the assertion 52.9% of the respondents. Those that neither agreed nor disagreed constituted about 23.5% of the respondents. There were 11.8% of respondents that either agreed or strongly agreed and that made those that concurred with the assertion 23.6% of the total respondents.

Figure 5: Whether there is good coordination with supply chain partners



n=51

The findings indicate that 43.14% of the respondents strongly disagreed with the assertion that there was high coordination between Choppies and its supply chain partners. There were 17.65% of the respondents that disagreed with that assertion, making those that did not agree with the assertion a majority of 60.79% of the respondents. There were 19.61 % that neither agreed nor disagreed with the assertion. Those that agreed were 13.73% of the respondents while those that strongly agreed were 5.88% and that made the total that agreed about 19.61% of the total number of respondents.

Table 4: Whether there is good coordination of Customer requirements

There is good coordination of customer requirements

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Stronly disagree	16	31.4	31.4	31.4
	Disagree	16	31.4	31.4	62.7
	Neither agree nor disgree	8	15.7	15.7	78.4
	Agree	6	11.8	11.8	90.2
	Strongly agree	5	9.8	9.8	100.0
	Total	51	100.0	100.0	

n=51

When asked whether they on the issue of whether Choppies had coordination with the requirements of the customers in its supply chain the 31.4% of the respondents indicated that they strongly disagreed, while another 31.4% of the respondents generally disagreed. Those that neither agreed nor disagreed constituted 15.7% of the respondents. The number of respondents that that agreed constituted 11.8% while those that did so strongly made up 9.8% of the respondents and that made the number that concurred with assertion about 21.6% of the total number of respondents

Table 5: Whether there is high staff capability at Choppies

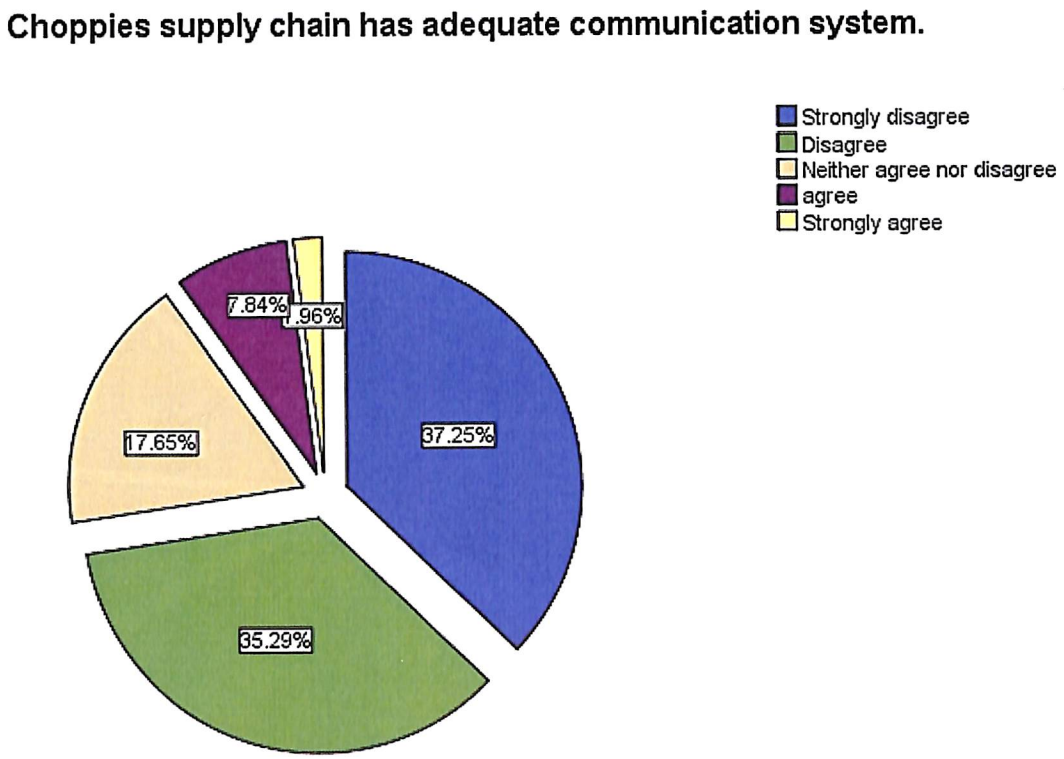
There is high staff capability at Choppies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	22	43.1	43.1	43.1
	Disagree	14	27.5	27.5	70.6
	Neither agree nor disagree	6	11.8	11.8	82.4
	Agree	6	11.8	11.8	94.1
	Strongly agree	3	5.9	5.9	100.0
	Total	51	100.0	100.0	

n=51

There were 43.1% of the respondents that strongly disagreed with the assertion that Choppies had high capability staff, while there were 27.5% of respondents that just disagreed. Therefore, the total that did not agree with the assertion made up 70.6% of the respondents. Of the respondents the findings showed that 11.8% neither agreed nor disagreed. The number that agreed made up about 11.8% while those that did so strongly constituted 5.9% of the respondents. That made the total that generally concurred about 17.7% of the respondents.

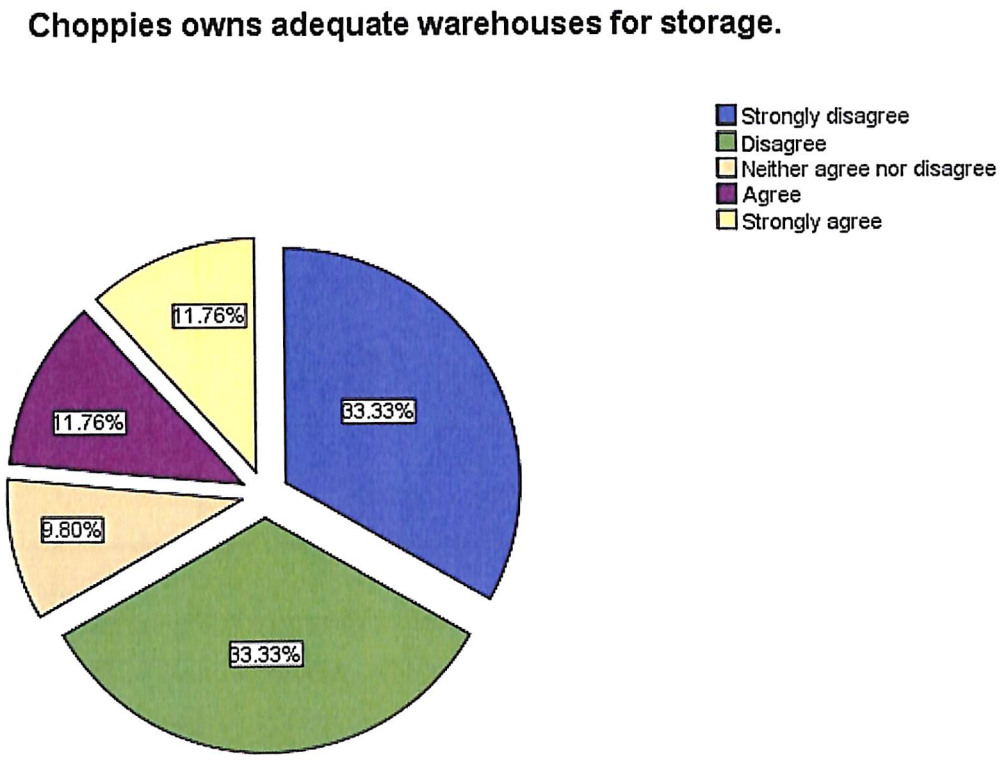
Figure 6: Whether Choppies had an adequate communication system



n=51

There were 37.25% of the respondents that strongly disagreed that Choppies' communication systems were adequate while about 35.29% just disagreed. That made the percentage that did not concur with the assertion about 72.54% of the respondents. The number that neither agreed nor disagreed made up about 17.65% of the respondents. Those that agreed constituted about 7.84% of the respondents while those that did so strongly made up 1.96% of the respondents. This means that a total of 9.8% of the respondents generally concurred with the assertion.

Figure 7: Whether Choppies had adequate warehousing storage



n=51

On the issue of whether Choppies had adequate storage about 33.33% of the respondents disagreed with the assertion, while about 33.33 % did so strongly. This made the total of those that generally did not concur a majority of 66.66% of the respondents. Those that neither agreed nor disagreed were about 9.8%% the respondents. Those that agreed made up 11.76% of the respondents while those that strongly agreed constituted 11.76% of the respondents. That means that the total number that generally agreed were 23.52% of the respondents.

Table 6: Whether Choppies high supply chain optimization

There is high supply chain optimization at Choppies

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	13	25.5	25.5	25.5
	Disagree	13	25.5	25.5	51.0
	Neither agree nor disagree	7	13.7	13.7	64.7
	agree	13	25.5	25.5	90.2
	Strongly agree	5	9.8	9.8	100.0
	Total	51	100.0	100.0	

n=51

On the issue of whether Choppies had adequate storage about 33.33% of the respondents disagreed with the assertion, while about 33.33 % did so strongly. This made the total of those that generally did not concur a majority of 66.66% of the respondents. Those that neither agreed nor disagreed were about 9.8%% the respondents. Those that agreed made up 11.76% of the respondents while those that strongly agreed constituted 11.76% of the respondents. That means that the total number that generally agreed were 23.52% of the respondents.

Table 7: Whether Choppies Transport was optimally used

Choppies Transport has is optimally used.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	28	54.9	54.9	54.9
	Disagree	12	23.5	23.5	78.4
	Neither agree nor disagree	7	13.7	13.7	92.2
	agree	2	3.9	3.9	96.1
	Strongly agree	2	3.9	3.9	100.0
	Total	51	100.0	100.0	

N=51

On the issue of whether Choppies Transport was optimally used a majority of 54.9% of the respondents strongly disagreed with the assertion, while about 23.5 % just disagreed. This made the total of those that generally did not concur a majority of 78.4% of the respondents. Those that neither agreed nor disagreed were about 13.7%% the respondents. Those that agreed made up 13.9% of the respondents while those that strongly agreed constituted 3.9% of the respondents. That means that the total number that generally agreed were 17.8% of the respondents.

Table 8: Whether Choppies Order processing is good

Order processing time is good

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	20	39.2	39.2	39.2
	Disagree	18	35.3	35.3	74.5
	Neither agree nor disagree	6	11.8	11.8	86.3
	agree	3	5.9	5.9	92.2
	Strongly agree	4	7.8	7.8	100.0
	Total	51	100.0	100.0	

n=51

On the issue of whether Choppies' processing time was good about 39.2% of the respondents disagreed with the assertion, while about 35.3 % did so strongly. This made the total of those that generally did not concur a majority of 74.5% of the respondents. Those that neither agreed nor disagreed were about 11.8%% the respondents. Those that agreed made up 5.9% of the respondents while those that strongly agreed constituted 7.8% of the respondents. That means that the total number that generally agreed were 13.7% of the respondents.

Table 9: Extent to which Choppies distribution costs were reasonable

The distribution costs are reasonable

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	9	17.6	17.6	17.6
	Disagree	22	43.1	43.1	60.8
	Neither agree nor disagree	10	19.6	19.6	80.4
	Agree	7	13.7	13.7	94.1
	Strongly agree	3	5.9	5.9	100.0
	Total	51	100.0	100.0	

n=51

On the issue of whether Choppies distribution costs were reasonable about 43.1% of the respondents disagreed with the assertion, while about 17.6 % did so strongly. This made the total of those that generally did not concur a majority of 60.7% of the respondents. Those that neither agreed nor disagreed were about 19.6%% the respondents. Those that agreed made up 13.76% of the respondents while those that strongly agreed constituted 5.9% of the respondents. That means that the total number that generally agreed were 25.5% of the respondents.

Table 10: Whether there is adequate materials handling technology

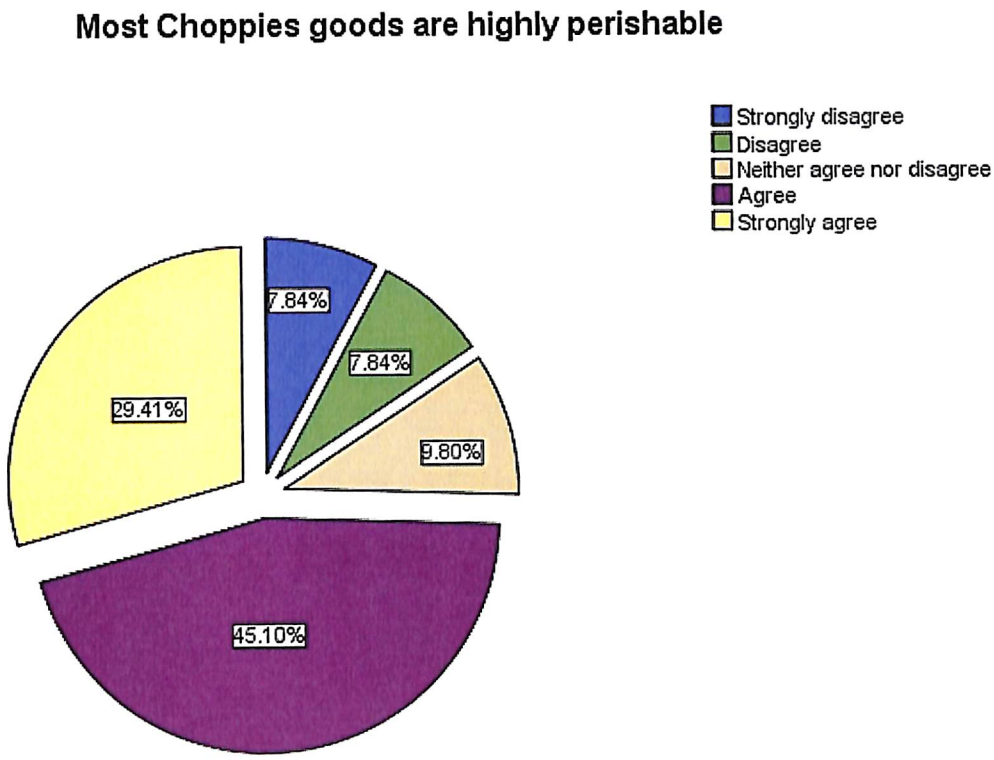
There is enough technology for materials handling

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly disagree	15	29.4	29.4	29.4
	Disagree	14	27.5	27.5	56.9
	Neiher agree nor disagree	11	21.6	21.6	78.4
	Agree	7	13.7	13.7	92.2
	Strongly disagree	4	7.8	7.8	100.0
	Total	51	100.0	100.0	

N=51

Asked whether Choppies had adequate technology for materials handling there were 27.5% of the respondents disagreed with the assertion, while about 29.4 % did so strongly. This made the total of those that generally did not concur a majority of 56.9% of the respondents. Those that neither agreed nor disagreed were about 21.6%% the respondents. Those that agreed made up 13.7% of the respondents while those that strongly agreed constituted 7.8% of the respondents. That means that the total number that generally agreed were 29.4% of the respondents.

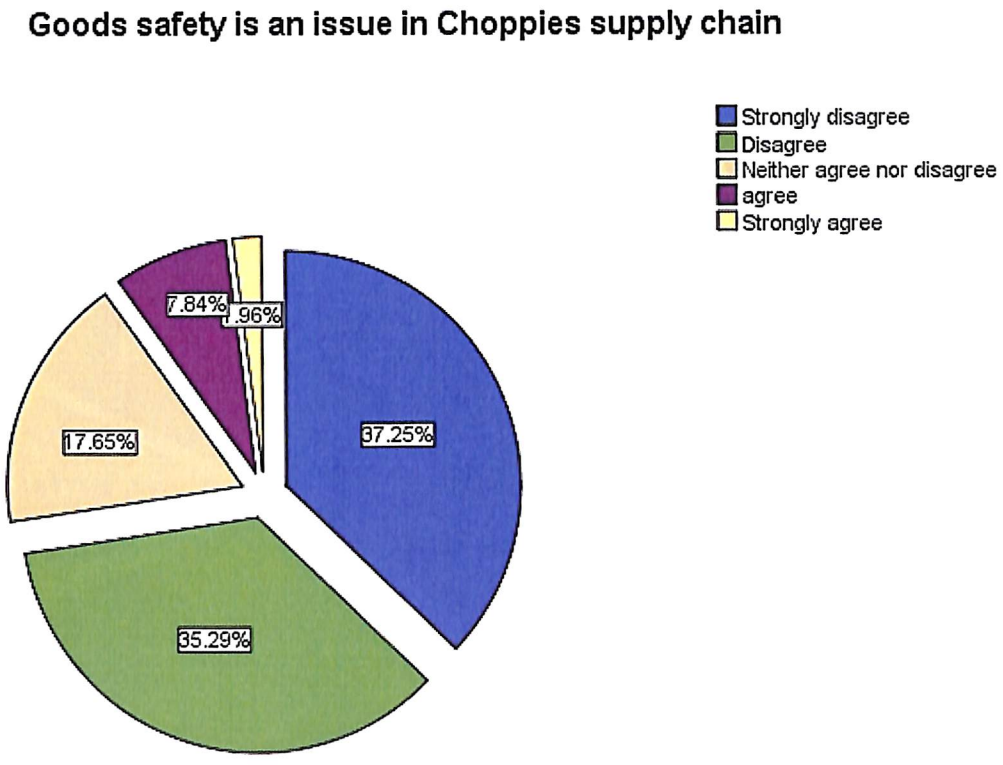
Figure 8: views on degree of perishability of Choppies merchandise



n=51

When asked about whether Choppies goods were mostly highly perishable there were about 45.10% of the respondents agreed with the assertion, while about 29.41% did so strongly. This made the total of those that generally did not concur a majority of 74.51% of the respondents. Those that neither agreed nor disagreed were about 9.8%% the respondents. Those that disagreed made up 7.84% of the respondents while those that strongly disagreed constituted 7.84% of the respondents. That means that the total number that generally disagreed were 15.68% of the respondents.

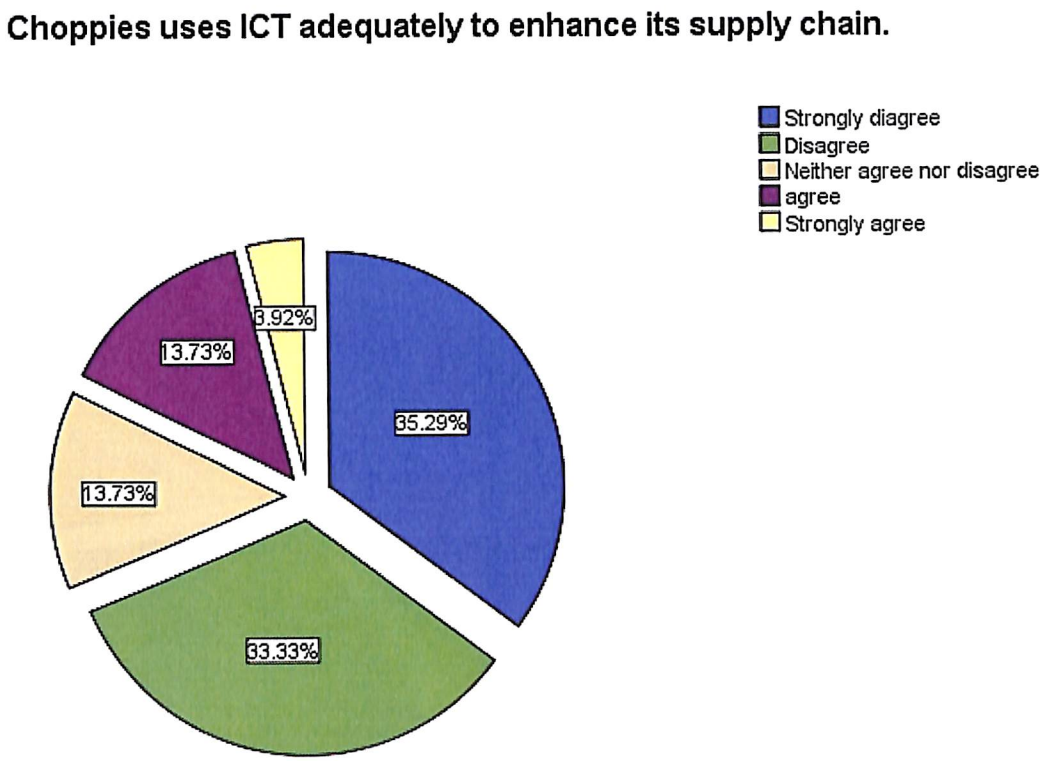
Figure 9: Whether goods safety is an issue in Choppies supply chain



n=51

On the issue of whether the safety of goods was an important issue in the Choppies supply chain there were 35.29% of the respondents disagreed with the assertion, while about 37.25 % did so strongly. This made the total of those that generally did not concur a majority of 74.54% of the respondents. Those that neither agreed nor disagreed were about 17.65%% the respondents. Those that agreed made up 7.84% of the respondents while those that strongly agreed constituted 1.96% of the respondents. That means that the total number that generally agreed were 9.8% of the respondents.

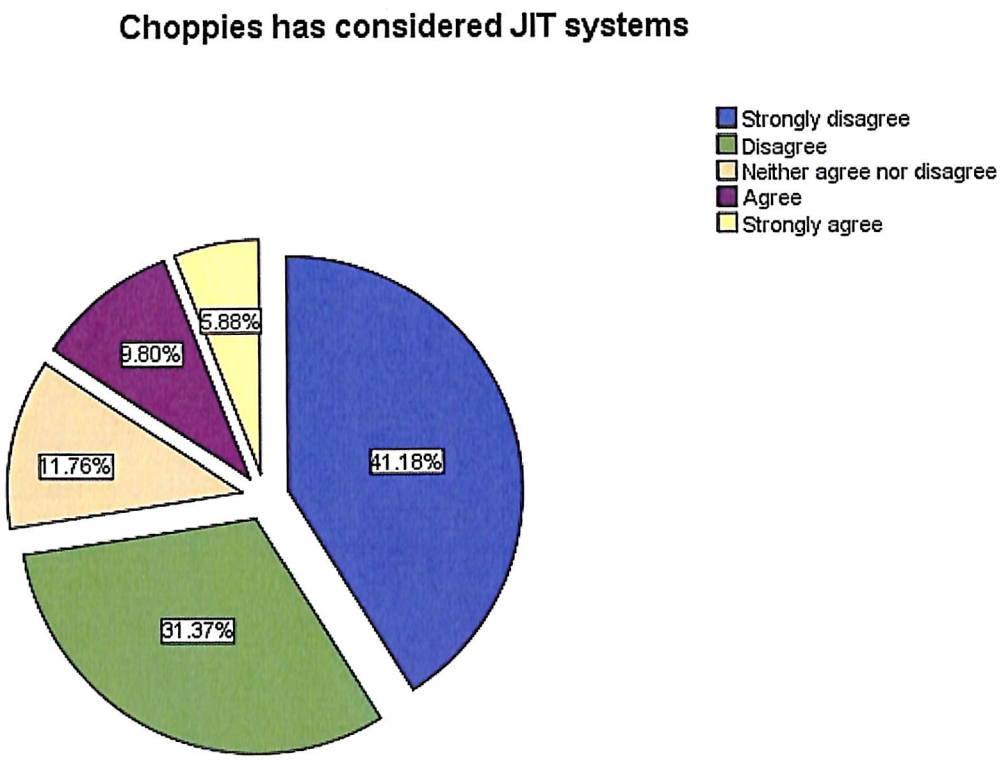
Figure 10: Whether Choppies supply chain uses ICT adequately



N=51

When asked whether Choppies supply chain adequately harnessed information and communication technology to enhance supplies there were 33.33% of the respondents disagreed with the assertion, while about 35.29 % did so strongly. This made the total of those that generally did not concur a majority of 68.62% of the respondents. Those that neither agreed nor disagreed were about 13.73% the respondents. Those that agreed made up 13.73% of the respondents while those that strongly agreed constituted 3.92% of the respondents. That means that the total number that generally agreed were 17.65% of the respondents.

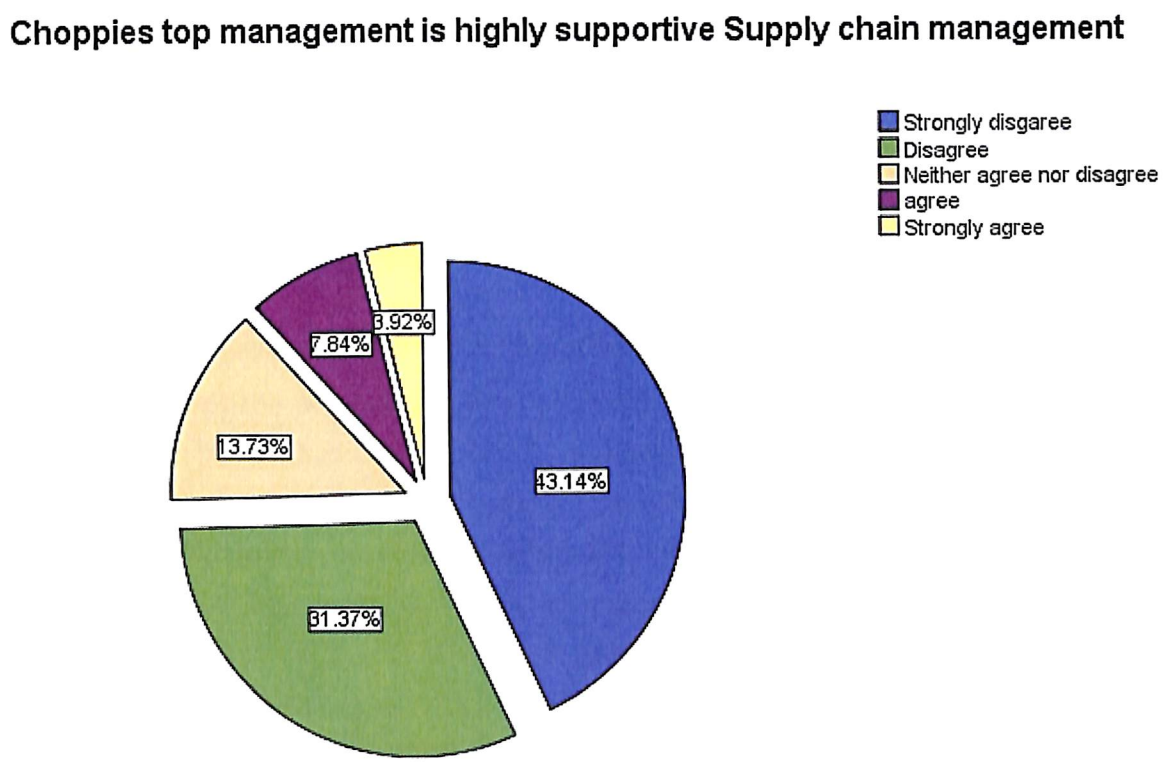
Figure 11: Choppies consideration of Just-in-time systems



N=51

On the issue of whether Choppies had considered just-in-time systems there were 31.37% of the respondents disagreed with the assertion, while about 41.18% did so strongly. This made the total of those that generally did not concur a majority of 72.55% of the respondents. Those that neither agreed nor disagreed were about 11.76%% the respondents. Those that agreed made up 9.8% of the respondents while those that strongly agreed constituted 5.88% of the respondents. That means that the total number that generally agreed were 15.68% of the respondents.

Figure 12: Whether Choppies management is supportive of supply chain Management



N=51

On the issue of whether Choppies management was highly supportive of supply chain management efforts 31.37% of the respondents disagreed with the assertion, while about 43.14 % of the respondents did so strongly. This made the total of those that generally did not concur a majority of 74.51% of the respondents. Those that neither agreed nor disagreed were about 13.73% the respondents. Those that agreed made up 7.84% of the respondents while those that strongly agreed constituted 3.92% of the respondents. That means that the total number that generally agreed were 11.76% of the respondents.

4.3. Management views on supply Chain efficiency and effectiveness at Choppies

On the issue of supply chain efficiency in the Choppies supply chain one manager (Manager A) gave a typically detailed example

"Efficiency and effectiveness are related terms. As far as I am concerned we are good in our supply chain but we have space for improvement and we are still ensuring that we engage consultants to train our staff in the latest technologies that are new in our industry. As management we are always scanning the market to find out what the best practices in the industry are so that we are not left behind. As for transport we have our own trucks for the large part, but where we run short we also outsource to other transporters in Botswana and South Africa, especially during the peak seasons like Christmas, New Year and other important holidays. Yes we have space to improve so we cannot say we have reacher optimum efficiency since we must always keep in the loop of what is happening in the market."

On why Manager A felt that the system was not that efficient he had the following to say about that issue

"The problems are partly beyond and within our control. When truckd delay there are bottlenecks in the supply chain that result in some idle time in our supply chain and as a result we lose customers and valuable partners, but since we now outsource transport things have improve tremendously. However, the other problem is of the Botswana road network that needs to be improved. Of course the government is trying to widen the roads to make transport faster, especially for our perishables, but Botswana roads are not as good as the South African road network which has more one way roads that reduce congestion – and by the way we get most of our supplies from South African and because of that we must make sure that we have a good lead time to avoid idle time. Yes, I can say that the roads in Botswana need some improvement so that we can maximize on the road transport that we rely on most"

Manager B gave the following response on what he thought about whether most tiers in the Choppies supply chain had adopted the technology required to make the supply chain more efficient.

"Yes we have some very up to date technology, but we still need to do more to meet the best practices as our outlets are increasing. There is also a lot of training required in Botswana so that the employees are up to date with the current technology. However, we have been engaged in a lot of training in all areas in the supply chain where we feel there is slack. For example we are involved with downstream and upstream engagements with our supply chain partners to make sure that we do not have idle time that delays the movement of goods and information to our partners."

On whether he felt that employees throughout the supply chain were well trained to man the supply chain efficiently, Manager C has the following to say which typically subsumes what other managers said;

"As for training of employees the supply chain is a bit long and some members are actively training their staff so that there is collaboration on technology throughout the supply chain and

there is more congruence. So us a Choppies we have engaged most of our partners upstream and downstream so that we ensure that all employees are trained so that they do not cause delays in the supply chain which involves so many goods. As you know we compete with other supply chains sometimes we have to up our game and be ahead but resources sometimes limit us. Also there is a lot of staff turnover to competing supply chains which can be a loss if you have trained your employees. "

On being askes of her opinion about the transport system in Botswana in relation to the Choppies supply chain the manager D gave the following view;

"Not really that bad, but there is room for improvement. I hear they are now trying to construct spaghetti roads that will result in more efficiency for all of us here in the retail sector as you are aware that we deal with perishable goods most of the time. The good thing is that our warehouses are located mostly out of town where there is more parking space and the congestion is less. Storage is cheaper out of town and we move our goods quite swiftly in the non-peak hours of traffic and so far we have been able to meet most of our customer and partner needs in the supply chain. Yes, Botswana needs to improve the road system so that we can transport goods faster than now"

On your view what they thought should be done to improve the Choppies supply chain manager A had the following to say;

"The supply chain involves many partners and there is need to ensure more collaboration and cooperation and that needs a lot of work for us as managers. It starts with cooperation among us as Choppies managers and goes beyond our organization so that all partners would add value by making sure that everything is smooth and no one suffers as a result of the sloppiness of some inefficiency on the part of some partners as you are aware that any slowness or low quality work would end up affecting all of us in the chain. As a result we have tried to employ expert staff on all aspects of our supply chain and we hape it will soon having result. The only challenge is that every partner have to do their part to ensure efficiency and effectiveness that reduces the current idle time and bottlenecks"

4.4. Chapter conclusions

The chapter dealt with data presentation and analysis. The data that was presented was from management and employees of Choppies. Management gave the picture that although the Choppies supply chain was showing signs of improvement, it was experiencing problems that affected its efficiency but management was working it. However, the employees painted a bleaker picture of the efficiency of the Choppies supply chain system. It could be that managers usually have a biased picture favouring their system as do

employees especially if they felt that they were not getting as well-paid as they expected which needs to be ascertained. However, on the whole both management and employees thought that Choppies had problems that need to be improved or were in the process of improvement.

CHAPTER 5 INTERPRETATION OF RESULTS

5.1. Introduction

This chapter is dedicated to the interpretation of results as obtained in light of the analysis contained in the chapter 4. This chapter is intended to provide a platform to make it it possible for the researcher to make some comparisons between the findings and what has always been assumed and what is in the literature.

5.2. Interpretation of the results

5.2.1. Demographic results and their possible implications

In terms of their demographic make-up the employees were mostly females and were mostly below the age of 41 with a small percentage of employees being 42 and above (which ca be considered as old employees. Therefore, the employees constitute an energetic workforce that was not too old nor too young nor too old to do their jobs to enhance supply chain efficiency. The fact that the majority of employees were female might make one argue that Choppies seems to be championing women empowerment, something important when one is making considerations of ethical practices in the supply chain. The fact that Choppie employees have attained Ordinary level education (O level) can be seen as a good thing for long term plans for the training of their employees especially in the area of improving their supply chain and subsequently, customer satisfaction. The fact that some few employees are professionally qualified could help Choppies to solve its problems of supply chain efficiency internally. The fact that most employees considered themselves as not being professionally trained means that the employees have training needs in some key aspects of their jobs

5.3. Issues on supply chain efficiency and effectiveness

5.3.1. Choppies has a problem of idle time

The data showed that Choppies had a problem of idle time meaning that its supply chain was not efficient. This is because the number of respondents indicating the prevalence of idle time is very significant. This means that the Choppies supply chain needs streamlining to make it more efficient and effective. It needs to take a hard look at it supply chain to ensure that the goods needed are ordered on time to make sure that there would be no shortages that led to employees and equipment

being underutilized. As a result, things such as lead time, employee efficiency and demand factors have to be properly assessed to avoid such problems in the future.

5.3.2. Choppies had supply chain infrastructure

The findings show that there were some challenges for the Choppies supply chain infrastructure because a significant proportion of respondents indicated that (70.6%). That could mean that the supply chain was not well configured. It could also mean that it was not well served by proper road, rail and ship transport systems. It could also mean that the Choppies supply chain was not properly and efficiently adopting information and communication technology in order to improve the speed and efficiency of the supply chain. That can mean that Choppies and its partners have much work to do in order to improve their supply chain infrastructure. As for those that remained neutral it means that they were not impressed by the infrastructure of the supply chain.

5.3.3. Choppies's materials management

The findings indicate that Choppies has some materials management challenges that need attention. The large proportion of respondents seemed to support that view. That could mean that Choppies needed better materials handling personnel or equipment to improve that. It could also point to problems with policies, management or/and resource allocation for materials management within the Choppies supply chain system.

5.3.4. Issues of coordination with supply chain partners

The evidence from the findings indicate that the majority of the respondents disagreed with the assertion that there was high coordination between Choppies and its supply chain partners (almost 61%). This means that Choppies did not have good links with its supply chain and that the supply chain needed more coordination in order for it to be more efficient. If those who remained neutral on the view of whether there was coordination or not are to be taken into account, it can be concluded that they did not see the coordination as being prevalent in the Choppies supply chain. That means that there is need to address the supply chain coordination issues in the Chopies supply chain.

5.3.5. Issue of good coordination of Customer requirements

When asked whether they on the issue of whether Choppies had coordination with the requirements of the customers in its supply chain the majority of 62.8% indicated that they disagreed. These taken together with those that remained neutral meant that Choppies needed to improve its customer focus through coordinating customer needs or requirements.

5.3.6. Staff capability at Choppies

The issue of staff capability featured prominently in the findings from the respondents. Since the majority (about 70.6%) of the respondents were in thought that Choppies staff lacked capability to improve the performance of the supply chain. Coupled with the fact that these respondents did not consider themselves as professionals this could mean that these employees lacked the skills required for them to do well in the supply chain.

5.3.7. Choppies adequacy of communication system

The evidence provided by the data proves there were communication problems in the Choppies supply chain as the majority of the respondents (almost 73%) claimed that they thought that communication systems in Choppies supply chain were indeed inadequate. The number that neither agreed nor disagreed could be viewed as not believing that the communication in the supply chain was adequate and that number could augment the number that had negative views of the communication challenges in the Choppies supply chain. Those that agreed were very small proportions of the respondents. All the available evidence showed that the Choppies supply chain communications systems were perceived as being in need of improvement.

5.3.8. Adequacy of Choppies warehousing storage

On the issue of whether Choppies had adequate storage the majority of the respondents thought that the storage at Choppies was inadequate. That has the implications that Choppies would need to lease space from those that have warehouses or who specialize in storage of the goods they deal in. warehousing could be important if Choppies does not have a just-in-time system. In summary it means that Choppies.

Warehousing was inadequate for its operations and that could have implications for the efficiency and effectiveness of the supply chain.

5.3.9. Issue of Choppies supply chain transport optimization

On the issue of whether Choppies Transport was optimally used a majority of 54.9% of the respondents strongly disagreed. The respondents thought that Choppies transport systems were inadequate and needed to be improved. That implied that the transport system of the Choppies supply chain was not efficient and therefore not effective enough to ensure maximum success for Choppies as a retail organization. Poor communication can lead to supply shortages as supplies might be delayed or not properly fulfilled with some possible reverse logistics which could prove rather costly for the organization.

5.3.10. Whether Choppies Order processing is good

Choppies needs to make some improvements in its order processing. There is space for Choppies make its order processing work so that it remains competitive in its supply chain. The supply chain will improve substantially if the order processing has these much needed improvements.

5.3.11. Issue of Choppies distribution costs

On the issue of whether Choppies distribution costs were acceptable, the respondents thought that distribution costs were not acceptable. It could be that the costs of distribution were too high compared with competing supply chains and that is likely to affect the prices charged to consumers on the downstream side of the supply chain. The concept of distribution deals with the functional aspect of the four rights of purchasing which is place, meaning that the goods should be at the right place for the customers to access them.

5.3.12. Adequacy of Choppies materials handling technology

Evidence from the data on whether Choppies had adequate technology for materials handling showed that Choppies was perceived as having inadequate materials handling technology. Considering that Choppies is a large supermarket chain this would mean that if Choppies has the problem of inadequate technology to

handle materials that would mean a that goods would not be moved fast enough to meet supply chain needs. This has a number of implications for the supply chain. The other implication of such a situation is that transport from suppliers becomes inefficient because offloading time would be delayed, and this results in the inefficiency of the supply chain. Moreover poor handling technology or its absence would likely lead to poor damaged stocks in the supply chain.

5.3.13. Views on perishability of Choppies merchandise

Evidence from the findings indicated that most of the goods that Choppies dealt with were mostly highly perishable because the majority of the respondents showed that. Those that neither agreed nor disagreed were could add to the number that was did not have much information. Compared to the number that thought that Choppies merchandise was mainly perishable the number that had the opposite view was significantly low. That meant that Choppies products mainly required special storage conditions.

5.3.14. Issues of goods safety in Choppies supply chain

On the issue of whether the safety of goods was an important issue in the Choppies supply chain there seemed to be no problem with that aspect. Since findings showed that the majority thought that there were no safety issues then it can be said that the Choppies supply chain had adequate safety measures for goods. Those that were neutral were just a few respondents meaning that there were no significant problems concerning in the Choppies supply chain.

5.3.15. Choppies supply chain and adequacy of ICT application

The findings showed that the Choppies supply chain did not adequately harness information and communication technology to enhance supplies as the most significant number of 68.62% were of that view. Those that remained neutral were viewed as generally not concurring that the Choppies supply chain made enough use of information and communication technologies that were available. These could also be see as being a bit skeptical that of the usage of information and communication technologies currently in the Choppies supply chain. The number that had a positive view of Choppies usage of Information and communication technologies was quite low and therefore insignificant. The implication was that there was need to improve the application of ICT in the Choppies supply chain.

5.3.16. Choppies consideration of Just-in-time systems

Concerning the issue of whether Choppies had considered just-in-time systems findings indicated that Choppies did not consider the adoption of Just in time systems to improve its supply chain efficiency. This was because the majority of the respondents of 72.55% of indicated that. Those that neither agreed nor disagreed were could be viewed as either having inadequate information of as viewing Choppies in negative light in as far as the use of just in time systems was concerned. The findings show that very few employees believed that Choppies applied just in time systems as its supply chain management strategy.

5.3.17. Choppies management supportiveness of supply chain Management

Management support of supply chain management efforts is very important. The findings on the issue of whether Choppies management supported supply chain efforts shows that the Choppies management was not highly supportive of supply chain management efforts as a significant majority of 74.51% seemed to indicate that. Those that neither agreed nor disagreed were deemed to be somewhat skeptical of the fcat that management was supportive and could be classified as having no positive thoughts about management support. Findings show that few respondents thought management was indeed supportive.

5.4. Chapter conclusions

Chapter 5 dealt with the interpretation of results and discovered that there were some problems that needed to be improved. These problems involve aspects such as the problem of idle time, poor communication and poor supply chain infrastructure. The other challenges included inadequate coordination, warehousing issues, and transport problems, especially related to congestions, order processing, and safety of goods and coordination of customer needs. That means that the Choppies supply chain appears to need a lot of improvements to increase its efficiency.

CHAPTER 6 CONCLUSION AND SCOPE FOR FUTURE WORK:

6.1. Introduction

This Chapter presents an elaboration of the major research findings and the recommendation of the action plan, that needs to be considered. The recommendations outline what can be done to ensure that issues of effectiveness and efficiency of supply chain are realized at Choppies supermarkets.

6.2. Conclusions

The researcher using the findings, me with the following conclusions;

a) There is some inefficiency at Choppies that is being caused by idle time. This means that deliveries are not being done on time and there is a lot of capacity and time wastage whereby employees and equipment are being underutilized.

b) Choppies has some challenges with its supply chain infrastructure and that could be the issue that is causing bottlenecks and idle time that is currently affectin the Choppies supply chain. This has led to serious efficiency problems for the supply chain. This has also affected how Choppies deals with its supply chain partners.

c) Choppies has some materials management problems and since this is an essential aspect of its supply chain management this has led to a lot of inefficiency. The materials handling equipment needs improvement to ensure supply chain efficiency.

d) There is poor supply chain coordination in the Choppies supply chain. This has the effect of causing poor linkages and inefficiencies in the supply **since coordination is needed to ensure that goods move smoothly through the supply chain.**

e) There is a problem with the issue of coordination of Customer requirements. Since customers are a vital link pulling goods through the supply chain when they are not happy and properly connected that has led to supply chain inefficiencies as their needs are more likely not being met or not being properly met according to the needs of the customers. This has contributed to inefficiency in the supply chain of Choppies.

f) Staff capability at Choppies is not optimized meaning that the employees are lacking critical skill sets that are required to make the supply chain functional and this seems to be no surprise as most of the employees do not have the required professional qualification needed and they also regard themselves not as professionals on the jobs they are currently doing in the supply chain.

g) The Choppies supply chain has some communication problems that need to be resolved and improved to make the supply chain more efficient. At the moment because of this communication problem the Choppies supply chain has some serious efficiency problems as communication is the key to the success of any supply chain which include many partners working in coordination.

h) There was some inadequacy of Choppies warehousing storage challenges. Storage problems may be the ones causing bottlenecks in the Choppies supply chain. It could also be part of the problems that caused the problems of idle time as the goods would not be at the right place at the right time. The absence of adequate warehousing affects the efficiency of the supply chain.

i) Choppies supply has some transport optimization challenges and since transport is a critical element in supply chain logistics this could be the main cause of the problems that are affecting its supply chain.

j) The Choppies Order processing system was found wanting as it was slow and not supported by well-trained ICT personnel. As rapid order processing makes goods and documentation flow smoothly throughout the supply chain the absence of a smooth order processing system could also have been a major contributor the inefficiencies that have been found bedeviling the supply chain.

k) Choppies distribution costs were unacceptable. The problem could be that these costs of distribution were too high compared with competing supply chains and that is likely to affect the prices charged to consumers on the downstream side of the supply chain. The concept of distribution deals with the functional aspect of the four rights of purchasing which is place, meaning that the goods should be at the right place for the customers to access them and the absence of a good supply chain affects its efficiency in availing goods and services to customers who pull the goods and services throughout the whole supply chain.

l) There were inadequate of materials handling technology at Choppies and that had an impact of the speed of the movement of goods in the supply. Materials handling has an impact on safety of employees and goods and that has a great bearing on the efficiency and effectiveness of the Choppies supply chain.

m) Choppies merchandise was found to be manly perishable and that had some implications on the need for an efficient supply chain. If the goods are not properly handled there would be losses

through expiring of the goods and their going bad. Delays in the supply chain are likely to lead to some losses if not attended to in a timely manner.

n) On the issues of goods safety in Choppies supply chain Choppies did not appear to have such problems.

o) Choppies supply chain did not adequately utilize information and Communication technology. This is most likely to have caused some of the slowing down and inefficiency of the supply chain.

p) Choppies has not made any consideration to employ the just-in-time system. This has had an impact on the efficiency and effectiveness of the supply chain as it leads to higher costs of storage which in turn leads to higher prices to the customers. That would lead to customers switching from the firm to competing businesses offering similar products.

q) Choppies management proved not to have the supportiveness that a good supply chain needs for it to function efficiently as supply chains need to be well resourced for them to become more efficient and therefore effective.

6.3. Recommendations

Having made the conclusions, the researcher used these to make the following recommendations;

a) There is need to eliminate inefficiencies caused by idle time by adopting Just in Time systems that cause the organization to be leaner and agile in ensuring that the needs of customers are met timeously and at the same time Choppies would incur reduced storage cost which translate into lower prices to customers and that means Choppies can get its competitors' customers thereby increasing its market share in the highly competitive retail business.

b) Choppies has some challenges with its supply chain infrastructure and that could be the issue that is causing bottlenecks and idle time that is currently affecting the Choppies supply chain. This has led to serious efficiency problems for the supply chain. This has also affected how Choppies deals with its supply chain partners.

c) Choppies needs to improve its materials management to avoid problems of inefficiency associated with poor materials handling such as low speed, delays and damaged goods. That would improve the efficiency of the Choppies supply chain.

d) There need for Choppies to work on the improvement of supply chain coordination. This can be done by harnessing ICT in order to enhance both speed and efficiency and effectiveness. Relations with supply chain member must be improved through networking and adopting systems such as electronic data interchange.

e) Choppies must take measures to ensure that there is proper customer coordination so that customer requirements are addressed adequately and in a timely manner. Since customers are a vital link pulling goods through the supply chain when they are not happy and properly connected that has led to supply chain inefficiencies as their needs are more likely not being met or not being properly met according to the needs of the customers. This has contributed to inefficiency in the supply chain of Choppies. Therefore, Choppies must ensure that purchasing works in close coordination with marketing so that there is a link in value addition from inbound logistics, processing and an outbound logistics with demand management being a critical aspect.

f) Since staff capability at Choppies is not optimized because employees are lacking critical skill sets that are required to make the supply chain functional there is need for training needs identification and recommending appropriate training for employees so that they are in a position to make the supply chain improve.

g) The Choppies supply chain has some communication problems that need to be resolved and improved to make the supply chain more efficient. At the moment because of this communication problem the Choppies supply chain has some serious efficiency problems as communication is the key to the success of any supply chain which include many partners working in coordination.

h) Since there some inadequacy of warehousing for Choppies there is need to deal with the problem in an innovative manner. This could be through Choppies having its own warehouses or adopting Just in time systems that ensure lean supplies but this must be carefully done as there might be problems of supplier inefficiency or/and shortage of certain goods at certain times.

i) As Choppies has supply has some transport optimization challenges and since transport is a critical element in supply chain logistics this could be improved by Choppies havng its own trucks or outsourcing transport to the best transporter which specializes in the field and thereby increasing the level of transportation in the supply chain. This would allow Choppies to focus on its core business of forecasting and satisfying consumer demand something that would lead to the overall efficiency of the whole supply chain.

j) Since the Choppies Order processing system was found wanting because of its slowness there is need to improve order processing through the use of ICT and the training of personnel in the use those ICT systems. That would make goods and documentation flow smoothly throughout the supply chain an eliminate time wastage and also lead to more efficiency and effectiveness

k) Choppies must ensure that its distribution costs are lower so that it remains competitive and acceptable as distribution cost are too high compared with competing supply chains and this has led to higher prices charged to consumers on the downstream side of the supply chain.

l) There were inadequate of materials handling technology at Choppies and that had an impact of the speed of the movement of goods in the supply. Materials handling has an impact on safety of employees and goods and that has a great bearing on the efficiency and effectiveness of the Choppies supply chain.

m) Since Choppies merchandise was found to be manly perishable and there is need for Choppies to speed up its order and sales processes and also have appropriate storage afcilifies in place to ensure that there is an efficient handling and flow of goods to the customers. This would mean that there would not be any losses due to perishability of the goods.

n) On the issues of goods safety in Choppies supply chain Choppies since it did not appear to have problems it must maintain that efficiency.

o) Choppies supply chain should adopt and adequately utilize information and Communication technology. This is most likely to make the movement of goods and all documentation faster and smoother and lead to efficiency of the supply chain.

p) Choppies should make serious efforts to adopt the just-in-time system. This has would likely have the impact of making the supply chain more efficient and effective as it promote supply chain

agility and leanness which would make it more and more responsive to consumer demand in a more realistic manner and thus avoid waste in the supply chain. .

q) Choppies management should be more supportiveness of supply chain management so that is functions efficiently as supply chains need to be well resourced for them to become more efficient and therefore effective.

6.4. Chapter conclusions

This chapter presented the research's overall conclusions and recommendations. The conclusions pointed to the fact that there were so many aspects that needed to be improved to make the supply chain more effective and efficient. The recommendations focus on improvements that the researcher thought would be possible taking into account the conclusions that were obtained from the data.

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APPENDIX A : CHOPPIES SUPPLY CHAIN QUESTIONNAIRE

SECTION B: EMPLOYEE QUESTIONNAIRE

My name is Nomakhosi Tsheza and I am a Master's Students at UPES pursuing an **MBA IN LOGISTICS AND SUPPLY CHAIN** I am conducting research on **factors affecting supply chain efficiency and effectiveness at Choppies.** I am kindly requesting you to answer the questions below by putting a tick at the appropriate position. Your answers will help me to analyze and interpret the information about my topic.

NB: All your responses will be confidential, and your involvement in this exercise is entirely voluntary.

TICK THE APPROPRITE ANSWER IN THE FOLLOWING QUESTIONS.

Part A: PERSONAL DETAILS

AGE

20-25 ☐

25-30 ☐

30-35 ☐

35-40 ☐

45-50 ☐

GENDER

MALE ☐

FEMALE ☐

MARITAL STATUS

Married

Single

Divorced

widowed

LEVEL OF EDUCATION

Masters degree ☐

Bachelors

Professional Cert ☐

Diploma ☐

O'Level

JC

Position in the organization .....

Professional Experience

LESS THAN A YEAR ☐

1-3 YEARS ☐

4-6 YEARS ☐

7-9 YEARS ☐

10-12 Years

13+ Years

PART A: SUPPLY CHAIN QUESTIONNAIRE

STATEMENT	POSSIBLE ANSWERS				
Supply chain Attribute	Strongly disagree	Disagree	Neutral Agree nor disagree	Agree	Strongly agree
1. Idle time is a problem in the Choppies supply chain					
2. The supply chain infrastructure for Choppies SC is good.					
3. Materials handling is well done					
4. There is high supplier coordination with supply chain partners					
5. There is good coordination of customer requirements					
6. There is high staff capability in the supply chain.					
7. The Choppies supply chain has high transport productivity.					

8. Choppies supply chain has adequate communication system.					
9. Choppies owns adequate warehouses for storage.					
10. There is high supply chain optimization at Choppies					
11. Choppies Transport has is optimally used.					
12. Order processing time is good					
13. Choppies manages its storage costs well.					
14. The distribution costs are reasonable					
15. There is adequate supply chain planning					
16. There is enough technology for materials handling					
17. Most Choppies goods are highly perishable					
18. Goods safety is an issue in Choppies supply chain					
19. Choppies uses ICT to enhance its supply chain.					
20. Choppies has considered JIT systems					
21. Choppies supply chain is highly coordinated					

22. Choppies top management is highly supportive Supply chain management					

APPENDIX B: MANAGEMENT INTERVIEW SCHEDULE

My name is Nomakhosi Tsheza and as per our appointment I have come to interview you as part of management to hear your views concerning the efficiency and effectiveness of your supply chain. You are free to answer the questions as you wish as long as you are giving answers relevant to the issues at hand.

1. Do you believe that the supply chain for Choppies is efficient?
2. Why do you feel it is efficient or inefficient?
3. What can you say about the way Choppies has adopted technology?
4. In your view do feel that employees throughout the supply chain are well trained to man the supply chain efficiently
5. What is your opinion about the transport system in Botswana in relation to the Choppies supply chain?
6. In your view what do you think should be done to improve the Choppies supply chain?
7. Any other information you wish to highlight and explain?