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DEDICATION

This dissertation is dedicated to my wife Nia Sandaramu for being patient with me during the time of my studies and to my daughter Tatenda and my two sons Tawananyasha and Tamukudzaishe Ryan. I hope this Masters degree will inspire you to go beyond this level and attain PhDs in your lives.
DECLARATION

I, Sam Joe, do hereby declare that this dissertation is the result of my own investigation and research, except to the extent indicated in the Acknowledgements, References and by comments included in the body of the report, and that it has not been submitted in part or in full for any other degree to any other university.

Student’s signature ........................................ Date......................

Supervisor’s signature ..................................... Date......................
ACKNOWLEDGEMENTS

I would like to acknowledge the University of Zimbabwe for giving me the opportunity to do the MBA program. I would like to thank the lecturers who imparted their knowledge to me over the duration of the program. It has helped me to solve a lot of business challenges that we were facing at our organization. The knowledge I acquired will stay with me in my personal and professional life. I would also want to acknowledge and thank my employer Transtobac (Pvt) Ltd for allowing me to undertake the program by giving me financial support and valuable time without which this achievement could not have been possible. I would like to acknowledge Mr. J Sixpence, Mr. T Sixpence and Mr Njinga for sharing valuable information about their company and allowing me to use their organisation as a case study.

Special thanks to Mr Gumbe for taking me through the dissertation and giving me the guidance in order to produce a research which meets the necessary requirements of the graduate school.

I would like to acknowledge my fellow students for being a wonderful class and when I lagged behind they gave me the reason to keep on going. To my family members, thank you for the love that you gave me despite the fact that I deprived you of the valuable time that you needed most during the long hours of studying.
ABSTRACT

The purpose of this research is to ascertain whether inventory management has a role to play in enhancing the performance of the business. A total of 15 managerial employees were interviewed through questionnaires and GCS (Pvt) Ltd was used as a case study to act as a proxy of the entire industry.

The research is based on a case study of GCS with information coming from literature and interviews from GCS managerial employees. The study is mainly inductive in its approach.

The business success of a retail supermarket lies with its ability to manage inventory properly. A well coordinated inventory management policy and control systems enhances business performance.

The researcher recommended that GCS should come up with clearly defined policies and procedures that are clearly communicated to its entire staff. POS transactions must be reviewed daily in order to detect mistrustful behaviour such as unnecessary and excessive access to the cash drawer, refunds and product returns. Proper training must be conducted to employees before being assigned to a POS terminal. Stock counts must be done at stipulated intervals for example on a weekly basis. If there is need, ad hoc cycle stock counts should be initiated to curb shrinkage through employees in the organisation.
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<thead>
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<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACCA</td>
<td>Association of Chartered Certified Accountants</td>
</tr>
<tr>
<td>AICPA</td>
<td>American Institute of Certified Public Accountants</td>
</tr>
<tr>
<td>AVCO</td>
<td>Weighted Average Cost</td>
</tr>
<tr>
<td>CCTV</td>
<td>Closed Circuit Television</td>
</tr>
<tr>
<td>CCZ</td>
<td>Consumer Council of Zimbabwe</td>
</tr>
<tr>
<td>CIMA</td>
<td>Chartered Institute of Certified Accountants</td>
</tr>
<tr>
<td>CZI</td>
<td>Confederation of Zimbabwe Industries</td>
</tr>
<tr>
<td>EOQ</td>
<td>Economic Order Quantity</td>
</tr>
<tr>
<td>ETR</td>
<td>Electronic Tax Register</td>
</tr>
<tr>
<td>FCG</td>
<td>Food Chain Group</td>
</tr>
<tr>
<td>FIFO</td>
<td>First-in, First-out</td>
</tr>
<tr>
<td>FMCG</td>
<td>Fast Moving Consumer Goods</td>
</tr>
<tr>
<td>GCS</td>
<td>Gutsai Convenience Stores</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GNU</td>
<td>Government of National Unity</td>
</tr>
<tr>
<td>ITR</td>
<td>Inventory Transaction Register</td>
</tr>
<tr>
<td>JIT</td>
<td>Just in Time</td>
</tr>
<tr>
<td>LIFO</td>
<td>Last-in, First-out</td>
</tr>
<tr>
<td>MRP</td>
<td>Material Requirements Planning</td>
</tr>
<tr>
<td>PCAOB</td>
<td>Public Company Accounting Oversight Board</td>
</tr>
<tr>
<td>PEST</td>
<td>Political Economic Social and Technological Analysis</td>
</tr>
</tbody>
</table>
PO  Purchase Order

POS  Point of Sale

SWOT  Strength, Weaknesses, Opportunities and Threats Analysis

WIS  Washington Inventory Service

ZIMRA  Zimbabwe Revenue Authority

ZIMSTAT  Zimbabwe National Statistic Agency

ZNCC  Zimbabwe National Chamber of Commerce
CHAPTER ONE: INTRODUCTION

1.0 INTRODUCTION
The researcher’s position is that the success of a retail supermarket is underpinned by the management of its inventory which plays a pivotal role in enhancing business performance. Inventory management is thus an important aspect of the business.

Inventory Management has been studied worldwide but its role in retail supermarkets has not been explored to a greater extent (Deloitte 2010). It is therefore the purpose of this research to evaluate the role of inventory management in enhancing business performance. A case study of Gutsai Convenience Stores (GCS) from 2009 to 2012 was adopted in this study because little has been done to study inventory management in small and medium sized organisations in Zimbabwe. In order to find solutions affecting GCS, this chapter looked at the background of the study and discussed PEST, Porter’s Five Forces and the SWOT analysis. The researcher also developed the research objectives, research questions and proposition that were used to come up with possible solutions to problems affecting GCS. The chapter ended with a chapter summary.

1.1 BACKGROUND
For a better understanding of the prevailing conditions GCS is operating under, the researcher used PEST, Porter Five Forces and SWOT Analysis. These situational analysis tools assist in determining the conditions under which the business is operating in. According to Pradhan (2009) a situational analysis assists a retailer to determine his or her position and it forms the basis of the core element of any strategies to be taken by the company.

1.1.1 PEST Analysis
According to Oldroyd (2006) the macro environment includes those forces that impact on the business by creating opportunities and threats over which it has no
real influence and control on. Pradhan (2009) indicated that these factors are 
outside the control of retailers as they vary from region to region as well as from 
one country to the other. These environmental factors affect the direction that a 
company will go whereby the success or failure will depend on the strength and 
weaknesses of such companies. These forces are summarized as PEST analysis 
implying Political, Economic, Social and Technological.

1.1.1.1 Political Factors
The political and legal landscape of Zimbabwe has gone through a difficult phase 
over the last decade. This had a major impact on the performance of the retail 
sector. The introduction of the land reform program in the year 2000 affected the 
supply of dairy and horticultural products to the retail industry as well as the 
downstream industries that relied on raw materials from the agricultural sector to 
process as inputs in order to come up with final products. The decline in product 
supply hence affected retail organisations badly as under stocking became the 
order of the day. This forced most of the retailers to close their shops or downsize 
so at to sustain their operations.

After the signing of the Global Political Agreement by the three main political 
parties in September 2008 the economy started to recover from almost a decade 
of turmoil. This has as a result raised foreign investor confidence in investing in 
the country as noted by the entry of Pick & Pay South Africa when they partnered 
TM Supermarkets.

While the government of national unity (GNU) has done a lot in boosting investor 
confidence, however certain enacted government laws on black economic 
empowerment programs have seen foreign investors shunning away from the 
country. The introduction of 51% indigenous ownership of companies has to a 
large extent impacted on foreign investment.

1.1.1.2 Economic Factors
During the Zimbabwean dollar era, the economy experienced torrential episodes 
of hyperinflation that affected the supply of products and services. On the other 
hand the current liquidity challenges facing the country have affected most
organisations as this has an impact on working capital. Companies have failed to restock due to constraints on working capital to finance operations.

As from 2009 after the inception of the multi currencies regime, some manufacturing organisations started producing products due the favourable economic conditions that started prevailing in the economy while on the same note importers were able to source products from outside the country. Since then, the retail sector in Zimbabwe has shown a considerable degree of growth as customers now have the ability to consume products from a wide range of shops as product availability has improved. Although products are readily available in the shops, prices are relatively high due to high costs of production and importation of products that are not locally available.

1.1.1.3 Social Factors

According to Waters (2006) social factors are those factors that have to do with demographics and cultural aspects of the environment which as a result have an impact on customer product demand and purchase pattern. The Zimbabwean populace has been displaced due to the harsh economic conditions that were precipitated around the year 2000. This has resulted in a number of people moving to the other countries thereby affecting the social fabric that was once solid and in existence.

Since 2009 there has been an improvement in income patterns in the working class and this has also affected the social pattern and the living conditions of people. This change in the social environment has also affected the buying patterns in the retail sector in Zimbabwe. However other factors such as the high unemployment rate prevailing in the country has a bearing on the demand for products by customers. According to the Confederation of Zimbabwe Industries (CZI) Report (2011) it was estimated that the rate of unemployment was over 80% despite the fact that the official figure from Zimbabwe National Statistic Agency (ZIMSTAT) indicated 10.7%. The high rate of unemployment has also been worsened by the large number of employees earning low salaries which are below the poverty datum line. According to the Consumer Council of Zimbabwe
(CCZ) Report (2012), the average consumer basket as at the December 2012 was $572.63. This meant that on average a family of six would need $572.63 to survive at the backdrop of meagre salaries averaging around $300.00 per month (CCZ, 2012). This has a negative impact on consumer pattern of buying.

1.1.1.4 Technological Factors
The technology industry is fast and ever evolving requiring other industries to be ever keeping track so as to meet customer expectations. The evolution from the use of desktops to laptops, use of 31/2 floppy disk, to the use of memory sticks, compact disks, external storage drives and change of software has had an impact on the retail industry. This has resulted in a continuous upgrade of the existing software and hardware in order to meet the current technological expectations of customers. In addition, the introduction of internet banking, ecocash and other modern products has resulted in some organizations introducing cell phone banking, therefore exerting pressure on companies to embrace technology faster. Internet and email technologies have played a major role in the dissemination of information electronically. Electronic Funds Transfers have been embraced in order to allow customers to transact easily and avoid carrying too much cash in their wallets. The Zimbabwe Revenue Authority (ZIMRA) also introduced computerized Electronic Tax Register (ETR) as a way to improve collection of Value Added Tax from companies. An (ETR) or printer is a device approved by the Government to record and issue fiscal data of goods and services sold (ZIMRA, 2012).

1.1.2 Industry Analysis
The retail industry is a big business the world over and hence plays a major role in the Gross Domestic product (GDP) of a country (Retail Industry Global Report, 2010). The origin of the word retailing has its roots in the French language and refers to the fundamental retailing activities of buying in large quantities and selling in smaller quantities (Bhatia, 2009). It is also noted that wholesalers are also involved in buying and selling but the ultimate difference lies with the nature of customers as retailers target the final consumers of products and services while wholesalers target retailers (Bhatia, 2009). Retailing is the final step in the
supply chain management connecting producers of commodities to the final consumers of the products such as food, consumer goods and financial services (Retail Industry Global Report, 2010).

The retail supermarkets industry is comprised of organisations such as OK Zimbabwe, TM and Pick n Pay, Spar Group, Food World, Denenga, Shoppa Stoppa, Shoprite, Nyaningwe, FCG, TN Mart, GCS and other small players.

To have a better understanding of the retail supermarkets industry in Zimbabwe, the researcher used Michael Porter’s Five Forces Model.

1.1.2.1 Threats of New Entrants

Retail business is based on building powerful brands and achieving a high level of distribution by achieving superior distribution networks through powerful supply chain management and making sure that products are available wherever and whenever they are needed (Bhatia, 2009).

The threat of new entrants is very high. This threat is high due to the fact that any organisation is free to enter into the retail industry. The retail industry has seen new players such as Pick and Pay teaming up with TM to set up Pick and Pay TM Supermarkets. TN Mart has also come on board as a new player on the market.

1.1.2.2 Bargaining Power of Suppliers

The bargaining power of suppliers is low. This is because supermarkets have access of procuring products even from across the border in countries such as South Africa where prices are low and favourable. The prices of locally produced products are relatively high as compared to imports because of high production costs.

1.1.2.3 Bargaining power of buyers

Since the dollarization of the Zimbabwean economy the bargaining power of buyers has been low. According to Zimbabwe National Chamber of Commerce (ZNCC) (2012) living standards have plummeted and according to some
estimates, unemployment has remained high above 80% resulting in a very weak domestic demand for products in the retail shops. There has been a sharp rise in products prices while consumers have not been able to push for reduction in prices to meet their pockets. The retailers blame the economic condition for the upsurge of the prices.

1.1.2.4 Threats of Substitutes
In the retail industry customers have an option of buying products directly from wholesalers. Wholesalers are cheaper than retail supermarkets but the only limiting factor is on the quantities which most retail customers can not afford to buy. According to ZNCC Report (2012) a considerable amount of business is taking place on the black market due to the rise in consumer demand and confidence thereby causing more damage on the sales.

1.1.2.5 Rivalry among Competing Sellers
This threat is very high as the supermarkets charge different competitive prices and offer promotions that attract customers to buy their products. As more and more supermarkets re-establish themselves, competition is also increasing thereby forcing prices down and ensuring that people have more options when deciding where to buy and what to buy.

1.1.3 Gutsai Convenience Stores background
GCS was founded by Mr. John Sixpence in 1993 as a family owned business. It is in the Fast Moving Consumer Goods (FMCG) retail supermarket business and plays an important role in the supply chain management. According to Paul (2008) FMCG refers to non-durable commodities that are required for daily and regular use. Gupta & Bansal (2012) described FMCG as things that are bought from local supermarkets on a daily basis and are relatively cheaper and have a high turnover. GCS is one of a success story of small family business in the FMCG supermarkets that started from humble beginnings and has managed to grow over the past two decades. The first branch was opened in Harare’s high density suburb of Glenview 8 as a small grocery shop and was later transformed into a bigger branch through an expansion program in 1999.
During the twenty years that GCS has been in existence, a lot of developments occurred which had both positive and negative impact on the business. Having been a member of a franchise group like Spar and Food Chain Group (FCG) had both benefits and pitfalls. GCS was once part of the Spar Franchise after its inception in 1993. In 2001, the company left the Spar Franchise and joined the Food Chain Group which was a locally established franchise. This was a grouping of various individually owned stores such as GCS, Food World and Denenga, that gave birth to a distribution centre called Compick Distribution trading as Food Chain Group. Members of the group would buy their stocks from the Distribution Group at discounted prices. Issues to do with stock-outs were not very common as the distribution centre had adequate stocks to supply member stores on credit basis. On the other hand, problems with settling of amounts owing to the centre by member stores resulted in viability challenges that affected the centre. The marriage with the Food Chain Group did not last for a long time as the benefits of franchising were becoming fewer and not noticeable due to the failure to adequately stock the distribution centre. This led to the pulling out from the franchise of some members to start their own independent groups such as Food World, Denenga Stores and GCS. Other members such as FCG Blue Lagoon and Market Square remained affiliates of the group and are still trading under the franchise of Food World Group.

After the breakaway from FCG franchise in 2002, the board decided to rebrand the company to become Gutsai Convenience Stores. With the opening of new branches, it was felt that the company was able to procure its own products without the need to fall under any franchise as it had the capacity to negotiate favourable prices and payment terms with suppliers because of bulk buying. Below is Table 1.1 which shows the store expansion as well as closure of some branches.
Table 1.1: Store expansion and closure

<table>
<thead>
<tr>
<th>Branch Name</th>
<th>Location</th>
<th>Year Opened</th>
<th>Year Closed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tichagarika</td>
<td>Glenview 8</td>
<td>1993</td>
<td>open</td>
</tr>
<tr>
<td>Glenview 1</td>
<td>Glenview 1</td>
<td>1999</td>
<td>2008</td>
</tr>
<tr>
<td>Sunningdale</td>
<td>Sunningdale</td>
<td>1999</td>
<td>2005</td>
</tr>
<tr>
<td>Nelson Mandela</td>
<td>Town</td>
<td>2001</td>
<td>open</td>
</tr>
<tr>
<td>Warren Park 1</td>
<td>Warren Park 1</td>
<td>2001</td>
<td>2008</td>
</tr>
<tr>
<td>Budiriro 1</td>
<td>Budiriro 1</td>
<td>2001</td>
<td>2008</td>
</tr>
<tr>
<td>Harare Street</td>
<td>Town</td>
<td>2005</td>
<td>open</td>
</tr>
</tbody>
</table>


The closure of branches as shown in Table 1.1 was as a result of viability challenges which needed streamlining of business operations. This was the best decision as profitability was compromised in these branches due to the harsh economic conditions prevailing during that time (GCS Annual Report, 2009).

1.1.4 Background of the problem

Retail business is a technology based industry and failure to enshrine the use of information and computer technology has a negative impact on the performance of the business (Retail Industry Global Report, 2010). The operations of the GCS have been greatly affected by not fully utilising computerised point of sale systems which can be used to manage inventory ordering costs through collaborations with suppliers.

GCS has been facing a dilemma of holding too much stocks as well as holding too little stocks in the shops on certain products. This has tended to create high inventory costs in their operations and a loss on potential sales through stock outs. According to GCS Annual Report (2012) sales decreased from
US$8.2 million in 2009 to US$4.9 million in 2012 as shown in Figure 1.1. In an effort to get quantity discounts from suppliers, GCS has experienced overstocking of some products which as alluded to has a bearing on inventory costs. Some products have reached a point of expiring in the shops due to overstocking as the company tried to earn discounts through bulk buying. Some products have become obsolete due to poor warehousing which has hence resulted in depreciated market value (GCS Annual Report, 2012). More so, the organisation has tied up funds in stocks that were creating a liability for the organisation in warehouse costs. Thus, GCS had to absorb these losses which affected business performance.

![GCS Annual Sales](image)

**Figure 1.1: GCS Annual Sales**

**Source: GCS Annual Reports (2009-2012)**

The absence of proper inventory management systems at GCS may have affected the way critical decisions are made by senior management in terms of stocking levels. This has affected the way stocks are purchased and managed in the warehouses. In some instances, management has been forced to assume that there are enough stocks and where they feel that there are not enough, they
have prioritised the purchase of stocks that are not in demand. The whole supply chain management becomes affected. Thus customer expectations are not being met and this has reduced profitability. On the other hand, GCS has been impacted by high levels of shrinkage as shown in Figure 1.1.

![Figure 1.2: Inventory shrinkage](image)

**Source: GCS Annual Report (2009-2012)**

According to Figure 1.2, shrinkage increased from 1.6% in 2009 to 2.7% in 2011 and slightly decreased to 2.6% in 2012 (GCS Annual Report, 2012). High levels of shrinkage have been as a result of availability of products which have created inventory management problems as more stocks are being lost due to theft, damages and wastage. This shows that proper inventory management has not been done in order to reduce shrinkage in the stores which enhances store performance.

GCS had a bloated staff compliment of 172 employees in 2012 which was reduced down to 113 (Head Office (6), Nelson Mandela (49), Harare Street (33))
and Tichagarika (25) employees in an effort to streamline the business. This has managed to pay off as costs have been reduced whilst efforts are being channeled towards restocking of the branches in order to be able to compete with established and upcoming retail stores. It is noted that the retail supermarket business is a low margin business which thrives on moving large volumes of products in order to be profitable and as such a bloated staff complement results in an increase in operating costs. This as a result had an impact on profitability of the business which declined from US$130,683.00 in 2009 to US$24,806.00 in 2012 as shown in Figure 1.3.

![Figure 1.3: GCS Profitability](source: GCS Annual Report (2009-2012))

Having looked at the background of GCS, the researcher then undertook a SWOT analysis as detailed below.

### 1.1.5 SWOT Analysis

The researcher used a SWOT analysis to discuss those factors internal to the organisation. SWOT in short refers to Strengths, Weaknesses, Opportunities and Threats.
1.1.5.1 GCS Strengths

GCS has managed to improve on product availability in its stores since the inception of the multi currency and the end of the hyperinflationary period which was characterised by product shortages. Diversification of the group into farming has created an immense improvement in the supply of fruit and vegetables to the group. This affords the stores to charge competitive prices as the goods are sourced at favourable prices. The organisation has also managed to build a brand name for its group of stores. It can procure goods directly from manufacturers at discounted price because of bulk buying.

The organisation has experienced and well trained staff to manage the operations of the organisation and this has improved customer service delivery. GCS has managed to cut down on its staff compliment in order to cut down on operating costs as the number of staff was reduced in 2012 from 172 to 113 employees (Head office (6), Nelson Mandela (49), Harare Street (33) and Glenview (25)). This has managed to pay off as costs have been reduced whilst efforts are being channeled towards restocking of the branches in order to be able to compete with established and upcoming retail stores. It has been noted that the retail supermarket business is a low margin business which thrives on moving large volumes of products in order to be profitable and as such a bloated staff complement results in an increase in operating costs which has an impact on profitability of the business.

1.1.5.2 GCS Weaknesses

GCS has been run as a family business over the years and there has been reluctance to grow the business to higher levels so that it can compete with retail shops such as OK Zimbabwe. GCS has been in business for over two decades and this should have been evidenced through a roll out of more branches but instead there has been closures of several branches. The performance of GCS has declined over the years as alluded to in section 1.1.4 which discussed the background of the problem and this can be attributed to weaknesses in inventory management systems. GCS has not been fully utilising its computerised point of sale systems to integrate with its suppliers which enhances an improved supply
of products to its stores. The inability to fully stock products has also affected
customer loyalty as it has been difficult to satisfy the needs of the customers.
Failure to satisfy customer needs in a retail supermarket is perceived as a major
weakness due to the effect it has on the overall performance of the business
(Genecon, 2011).

1.1.5.3 GCS Opportunities
The favourable stability in the macroeconomic environment in Zimbabwe has
created a favourable environment for branch expansion as well as reopening of
the branches that were closed during the economic hardships. Closure of other
retail outlets such as Afro Foods, Mr Price and Town and Country has also
created opportunities for expansion for the organisation.

1.1.5.4 GCS Threats
GCS experiences stiff competition from big retail shops such OK Zimbabwe, Spar
Group, TM Supermarkets (Pick & Pay), Food World, Denenga, Food Chain
Group, TN Supermarkets and other small players such as Lucky Seven, Chikos
supermarket and various individually owned stores. The consumer basket value
of goods bought in a grocery shop has decreased drastically due to the
mushrooming of small players who are charging less for the same products as
they do not incur huge operating cost. These small players are a major threat to
GCS as they compete for the same customers.

The instability of the GNU has made it difficult to plan accordingly as the business
climate has become delicate. GCS has put on hold plans to reopen shops that it
closed and can only reconsider such moves when there is stability and certainty
in the country. Any government decision to reintroduce the Zimbabwean dollar as
widely called for by some quarters would very likely have severe repercussions
on inflation and availability of goods on the market.

On the other hand changes in fiscal policies on selected imported products such
as soaps, meat products, beverages dairy products and cooking oil has had a
bearing effect on the operation of GCS in Harare. The increase in surtaxes and
ban on some imported products announced by the Minister of Finance in his Budgetary Statement (2013) resulted in an increase in the landed price of goods which have an effect on the final price to the customer.

1.2 STATEMENT OF THE PROBLEM
The main problem this study seeks to address is that of improvement of business performance through inventory management at GCS. Retail supermarkets are characterised by high volumes of products with low margins and therefore failure to manage inventory has a negative impact on the organisation’s business performance. GCS has invested a lot of funds in inventory yet there is a downward trend in turnover from $8.9 million in 2009 to $4.9 million in 2012 due to inability to efficiently control and manage inventory. On the other hand in trying to balance the demand and supply of goods, GCS has found itself in a dilemma of overstocking and under stocking of certain goods which has impacted negatively on inventory costs. As a matter of fact, inventory has an implication on the financial performance of the organisation and this was evidenced by the closure of 4 supermarkets before 2009 owing to stock costs and shrinkage. According to GCS Annual Report (2012) shrinkage was the main worrying cost that had increased from 1.6% in 2009 to 2.6% in 2012. According to Tracy (2002) the average acceptable retail shrinkage rate must be between 1.5% and 2%. If this problem of poor inventory management at GCS is not addressed, it may lead to more closure of shops.

1.3 RESEARCH OBJECTIVES
The research seeks to:

1. Establish the existence of inventory management systems at GCS.
2. Assess inventory control systems at GCS and their impact on inventory shrinkages.
3. Assess how GCS is managing inventory costs.
4. Recommend appropriate and effective inventory management systems that can be implemented at GCS.
1.4 RESEARCH QUESTIONS

1) What inventory management systems are in existence at GCS?
2) What inventory control systems are in place to manage inventory shrinkages at GCS?
3) How is GCS managing inventory costs?
4) What appropriate and effective inventory management systems can be recommended to GCS?

1.5 STUDY PROPOSITION

The proposition of the study was,

Business performance of GCS can be improved by adopting proper inventory management systems.

1.6 JUSTIFICATION OF THE RESEARCH

The study is justified as it takes into consideration stakeholder groups that are: the researcher, the organisation and nation at large.

1.6.1 The researcher

The researcher sought to fill in literature on inventory management, which has not been analysed in depth. It is also the last hurdle of the journey that involved taught courses of the Masters in Business Administration and as such it is a requirement of the Graduate School of management that one has to partake in a research in order to complete the program.

1.6.2 The organisation

Performance of every company is as a result of application of various business systems and concepts that add value to the shareholders. The study therefore avails an opportunity to the organisation to use the results of the research and recommendations to improve on areas it is lacking and also strive to even improve more on the areas it is doing better.
1.6.3 The nation
The research sought to add considerable value to the existing body of knowledge by providing new findings. Similar organisations may use the findings of the study with or without amendments to improve on their operations.

1.7 SCOPE OF RESEARCH
The study focused on information that came from GCS in Harare. The period under review is from 2009 – 2012.

1.8 DISSERTATION OUTLINE
The dissertation comprises of five chapters which are as follows:

Chapter One: Introduction
This chapter gives a background of the study, the research problem, objectives, questions, proposition, and justification of the study, the scope of the study, limitation and ethical issues.

Chapter Two: Literature Review
This chapter gives a comprehensive account and critique of the relevant literature on inventory management systems.

Chapter Three: Research Methodology
This chapter covers the research methodology which outlines the research philosophy, sampling methods, data collection and sampling size.

Chapter Four: Research Results and Discussion
Chapter four covers data analysis and discussion of results of the research.

Chapter Five: Conclusions and Recommendations
This is the final chapter of the dissertation and gives a conclusion of the research in line with the research objectives set out in chapter one.
1.9 CHAPTER SUMMARY

This chapter focused on the background of GCS. The researcher established research objectives and research questions to be addressed at the end of the study. The next chapter will be Chapter two which will review literature on inventory management from text books, published journals and the internet. The literature reviewed will help to tackle the research problem using several relevant authors who have published secondary data in the area of inventory management.
CHAPTER TWO: LITERATURE REVIEW

2.0 INTRODUCTION
In this chapter inventory management is defined. The need to show the role of inventory management in enhancing business performance is also looked at by going through various literature reviews. To select the most relevant literature for the review, articles by various authors from books, journals and newspapers are used. The researcher also used the internet to further expand on the literature review. The study period covered by this review is between 2009 and 2013, but a few important studies conducted before the year 2009 were also included.

2.1 WHAT IS INVENTORY?
According to Muller (2011), it is described as those resources or items held up and used by the organisation. In others words, it is referred to as stocks (Bragg, 2011). Jain (2007) also defined inventory as a stockpile of a company's products that it would sell in future in the normal course of business and this also includes the resources or materials that are used to produce final products.

According to Vollmann, Berry, Wyback and Jacobs (2004) inventory can be categorised into raw material, partly finished and finished products. In services, Jacobs and Chase (2008) referred to inventory as tangible products to be sold and those supplies that are necessary to administer the service. In a retail supermarket, inventory is in the form of finished goods and raw materials (Chary, 2004). Vollmann et al. (2004) illustrated a typical example of a bakery section which has flour as raw materials and then bread as finished products. According to Hinkelman and Putzi-Ortiz (2009) inventory in the distribution environment can either be classified as inventory in transit or warehouse inventory. In transit would cover inventory that is moved in the system while warehouse refers to goods in the warehouses (Jacobs & Chase, 2008).

2.2 PURPOSE OF INVENTORY
According to Chary (2004), one of the basic reasons of having inventory is to ensure that there is no hampering of production as inventory might not be
delivered when needed most. Ross (1996) indicated that the purpose of inventory is to ensure that the company has the ability to satisfy customer needs with the correct products that are required. Chary (2004) went on to indicate that the role of inventory analysis in various areas such as retail, manufacturing, services or distribution is to specify the quantities of items to be ordered as well as when the order will be made. The when and how much to order may change due to the long term relationship as many firms tend to enter into long-term supply relationships with suppliers (Vollmann et al., 2004). Some of the three main reasons why organisations keep supplies of inventory according to Slater (2010) are as follows:

a) **A temporary measure to accumulate stocks prior to major events or projects.**
According to Slater (2010) companies accumulate inventories before embarking on major projects to ensure that there is adequate supply to meet the demand. Events such as trade fairs can be a major reason of accumulating inventories in order to meet the expected increase in demand (Bragg, 2011).


b) **To provide a safeguard on material supply in a timely manner.**
According to Slater (2010), the purpose of inventory is to ensure that there is a timely supply of products so that they are available when they are needed to avoid incurring losses due to lost sales. Delays in materials ordered from suppliers can occur through variations in shipping time, material shortages that causes product backlogs and lost orders (Vollmann et al., 2004). The retailers major function is to breakdown products into smaller and user friendly units so as to ensure that products are available when demanded by customers (Bragg, 2011). The availability of products ensures that customers do not keep large quantities at home as they are guaranteed of supply at the supermarket when the need arise (Brooks & Wilson, 2007). According to Bragg (2011) by maintaining stocks, retailers provide an important benefit to consumers. This function is particularly important to consumers with limited storage space and those who want to purchase perishable merchandise like meat and produce, just before they consume it (Levy & Weitz, 2008).
c) To take advantage of economic purchase order quantities. There are number of costs such as labor and phone calls that are associated with placing huge orders as the more frequent orders are done the more the costs and the larger the order the more the organization benefits from quantity discounts (Vollmann et al., 2004). Slater (2010) concurred that batch sizes force companies to buy more products than needed so as to avoid incurring additional costs associated with placing smaller orders as they try to enjoy discounts from bulk orders. Murray (2006) also observed that bulk buying of products from a franchiser who may be the sole distributor of products results in benefits being derived by the franchisee in the form of bulk buying discounts.

2.3 WHAT IS INVENTORY MANAGEMENT?
Inventory management is a collection of interdisciplinary processes that include a full circle from supply chain management to demand forecasting, through inventory control and including reverse logistics (Purchasing Procurement Centre, 2012). Investopedia (2012) defined inventory management as the overseeing and controlling of the ordering, storage and use of components that a company will use in the production of the items it will sell as well as overseeing and controlling of quantities of finished products for sale.

2.4 IMPORTANCE OF INVENTORY MANAGEMENT
Inventory management plays an important role in matching demand and supply in the entire supply chain management and by providing flexibility in coping up with external and internal events of the today’s uncertain globalised business environment (Croxton, 2002). A well managed inventory system in a retail supermarket plays a pivotal role in the performance of the business (Levy & Weitz, 2008). Peel and Wilson (1996) (as cited in Abdulraheem, Yamaya, Isiaka & Aliu, 2011) asserted that the best way to avoid business failure in smaller businesses is through the implementation of efficient inventory management policies which results in an improvement in the performance of the business. Having inventory is certainly necessary for most merchants if they expect to do business with their customers (Levy & Weitz, 2008). However, accumulating as much inventory as possible is not the purpose of merchandising or manufacturing
companies as good business management entails having the right assets at the right place in the right time and in the right quantity (Zipkin, 2000).

### 2.5 INVENTORY MANAGEMENT POLICIES

#### 2.5.1 Inventory Management System

An inventory management system may be defined as a set of policies and controls that monitor and determine inventory levels, when to be ordered and how large the order should be (Stevenson, 2006 & Vollmann et al., 2004). According to Stevenson (2006), the system ensures that goods are properly ordered, receipted and tracked so as to know from whom the order has been ordered as well as the total cost of the order.

The enhancement of business operations in the FMCG Retail Supermarkets has been impacted positively by the use of inventory management systems that have assisted in controlling critical business assets which transforms organisations to achieve profitability (Bragg, 2008). Investments in stocks represent major assets of most industrial and commercial organisations and it is essential that such investments do not become unnecessarily large (Drury, 1994). Inventory management is therefore an important part of working capital management in a retail supermarket (Associated Certified Chartered Accountants (ACCA), 2010). It provides product availability which is a key dimension of customer service (Stevenson, 2006). It is critical to understand the details of inventory management and an effective inventory management system (Investopedia, 2012). According to Purchasing Procurement Centre (2012) investments in idle inventory can be minimised or reduced by an application of lean practices that will cut down on rental, shipping costs while at the same time enhancing customer service. There are two methods of managing inventory and these are perpetual and periodic inventory management systems (Roy, 2007).

#### 2.5.1.1 Perpetual Inventory management

Purchasing Procurement Centre (2012) defined perpetual inventory system as a system that has an ability of updating inventory accounts at the point of each purchase or sale. The system can allow an organisation to access current
inventory levels in real time and also has a facility to identify products that are to be ordered, those on the shelves, in storerooms and those that might be obsolete (Rittenberg, Johnstone & Gramling, 2009). According to Nikolai, Bazley and Jones (2009) this system can support the organisation to make temporary plans and controls that help in avoiding stock outs. According to Roy (2007), a perpetual system can either be based on batch system or online meaning that batches can be collected and posted periodically while in online, transactions are updated immediately and there are no delays whatsoever in processing. Bragg (2008) noted that online processing ensures that critical information for decision making pertaining to inventory levels, sales for the day, and fast moving items is readily available to management.

2.5.1.2 Periodic Inventory management
Starinsky (2001) defined it as an inventory management system that relies on stock counts that are done periodically and does not attempt to make available accurate inventory balances at any given time. On the other hand Bragg (2008) defined it as a tracking system that determines the level of stocks only at fixed points in time through the conducting of physical stock counts. It allows a company to know the beginning and closing values of its inventory but does not track inventory on a daily basis (Rittenberg, Johnstone & Gramling, 2009). Thus, this system involves regular review of the inventory usage and reorder to a carrying point (Purchasing Procurement Centre, 2012).

2.5.1.3 Perpetual versus periodic inventory systems
Unlike the perpetual system which updates inventory continuously at the time of purchase and sale, the periodic system is concerned with updating inventory on a periodical basis and this is mainly done monthly, quarterly or at year end (Roy, 2007). According to Rich, Jones, Heitger, Mowen and Hansen (2011) a perpetual system allows management to plan, control and monitor its inventory thus avoiding stock-outs. In a retail supermarket, a perpetual system is better than a periodic one as inventory needs to be constantly monitored and controlled in order to be able to cut down on inventory costs, reduce over-stocking and under-stocking (Nikolai, Bazley & Jones, 2009).
2.5.2 Inventory Valuation Methods

It is critical for businesses to value their inventory as it is a significant portion of current assets (Drury, 1994). Inventory is classified as a current asset as it can be disposed of within one year (Damodaran, 2012). According to Khan and Jain (2008) there are a number of generally accepted methods of inventory valuation methods that are used by various organisations at the close of periods and these different methods have an impact on the cost of goods sold which inevitably has an effect on the profits of the company. Despite the importance of inventory, its valuation is often not precisely accurate because of the organisation's policies and procedures (Rajasekeran & Lalitha, 2011). It is therefore prudent to discuss these inventory valuation methods.

2.5.2.1 First-in, First-out (FIFO)

This method assumes that the first goods to be received are the ones to be sold first (Kinney & Raiborn, 2012). Under FIFO, the cost of goods sold is based upon the cost of materials bought earliest in the period, while the cost of inventory is based upon the cost of materials bought later in the year (Damodaran, 2012). This results in inventory being valued close to current replacement cost (Marks, Robbins, Fernandez & Funkhouser, 2005). During periods of inflation, the use of FIFO will result in the lowest estimate of cost of goods sold among the three approaches, and hence realises the highest net income (Prasad & Sinha, 1990).

2.5.2.2 Last-in, First-out (LIFO)

Under LIFO, the cost of goods sold is based upon the cost of materials bought towards the end of the period, resulting in costs that closely approximate current costs (Damodaran, 2012). The inventory, however, is valued on the basis of the cost of materials bought earlier in the year (Kinney & Raiborn, 2012). During periods of inflation, the use of LIFO will result in the highest estimate of cost of goods sold among the three approaches, and thereby attains the lowest net income (Marks et al., 2005).
### 2.5.2.3 Weighted Average Cost (AVCO)

This approach allows both inventory and the cost of goods sold to be based upon the average cost of all units purchased during the period (Kinney & Raiborn, 2012). This approach is closely similar to FIFO than LIFO when inventory is turned over rapidly (Damodaran, 2012).

### 2.5.2.4 Advantages and disadvantages of inventory valuation methods

**Table 2.1: Advantages and Disadvantages of inventory valuation methods**

<table>
<thead>
<tr>
<th>VALUATION</th>
<th>ADVANTAGES</th>
<th>DISADVANTAGES</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIFO</td>
<td>• It represents what is currently happening - oldest inventory out first.</td>
<td>• It can be a burden to identify each oldest batch.</td>
</tr>
<tr>
<td></td>
<td>• It is easy to use and understand.</td>
<td>• Difficult to use when there are various prices for the same goods.</td>
</tr>
<tr>
<td></td>
<td>• Valuation is based nearly on replacement cost.</td>
<td>• Prices may lag behind current market prices in a period of hyperinflation.</td>
</tr>
<tr>
<td>LIFO</td>
<td>• Inventory is issued at current market value prices.</td>
<td>• It can be a burden to compute the current market value prices.</td>
</tr>
<tr>
<td></td>
<td>• Managers are always aware of recent costs charged to their departments.</td>
<td>• It is difficult to explain to managers.</td>
</tr>
<tr>
<td>AVERAGE COST</td>
<td>• There are no price fluctuations as it uses average prices therefore</td>
<td>• The issue price is not often the definite price that has been paid.</td>
</tr>
<tr>
<td>(AVCO)</td>
<td>making it easier for decision making</td>
<td>• Prices more often tend to lag behind the market values.</td>
</tr>
<tr>
<td></td>
<td>• Very easy to administer.</td>
<td></td>
</tr>
</tbody>
</table>

Source: Chartered Institute of Management Accountants (CIMA) (2010)
2.6 INVENTORY MANAGEMENT PROCESS FLOW

Inventory management is at the centre of the whole supply chain as it begins with the demand forecast based on historical and market trend data, touches the supply chain management, goes on to look at the handling of goods and finally it ends with the customer (Cognizant, 2011). To maintain an optimum level there should be a balance between supply and demand (Sabri & Shaikh, 2009). The supply chain management plays an important role in an organisation as it improves efficiencies by shortening the ordering and receipting time without incurring extra inventory cost (Purchasing Procurement Centre, 2012). Supply chain activities cover everything from product development, sourcing, production, and logistics, as well as the information systems needed to coordinate these activities (Handfield, 2011).

Inventory management systems according to Anderson (2012) are meant to check on the availability of products, establish purchasing patterns and continuously check on obsolete products. It is a system that creates customer satisfaction through the availability of products (Seuring & Goldbach, 2002). An organisation can generate an efficient inventory management system through a detailed appreciation and understanding of the impact of inventory control on customer satisfaction (Anderson, 2012). Below is a diagrammatic presentation of the inventory management process flow.
Forecasting is a necessary pre-requisite to most operational activities (Lewis, 1997). According to Schrie bfdeder (2012) there are four rights of effective inventory management that ensures that there is an accurate forecast product demanded in future and these are: getting the right quantity of the right item to the appropriate recipient at the appropriate time. Without an estimate of the future it is not possible to plan for the level of activity which is to be expected and, therefore it is not feasible to project the resources that need to be designed, planned and controlled to fulfil that level of activity (Lewis, 1997). According to Cognizant (2011) there are four elements of forecasting for items which have a recurring usage and these are:

- Using the average of the previous usage.
- Through the use of a trend derived from past usage.
- By using expected future usage which is not revealed in past trend or usage.
• By projecting a forecast horizon indicating when material ordered today can be received and the duration of time for which inventory has to be purchased (Cognizant, 2011).

The next section is the stores sections where goods received should be inspected, counted, weighed, measured, or graded in accordance with applicable requirements (Georgiades, 2009). A quantity mismatch occurs when there is a difference between quantities on the invoice and those on the purchase order (Cognizant, 2011). This is resolved by recounting of the received quantities or by double checking on the quantities on the invoice (Sabri, Gupta & Beitler, 2006). There should be a periodic check of the accuracy of any mechanical facilities used for these purposes (Public Company Accounting Oversight Board (PCAOB), 2013). Receiving clerks should prepare reports pertaining to all goods received (Flood, 2012). The receiving report should be compared with quantities shown on bills of landing or other documents received from the owner or other outside sources by an employee independent of receiving, storing, and shipping (PCAOB, 2013).

According to Washington Inventory Service (WIS) International (2013) it is necessary to determine the prices and quantity of products on hand within a store to ensure store operational efficiency. Stock count which is necessary in inventory management is defined as a process of counting inventory on a periodic basis throughout the year (Gupta & Randhawa, 2008). Stock counts are used to check for discrepancies between physical and record balances on a regular basis (Rachchh, Gadade, Patil, & Rachchh, 2010). According to Tompkins & Ferrell (2012) inaccurate inventory in the system from stock counts which does not match to book value can cause increased poor customer service, low service levels, operating costs and higher inventory levels.

Stock counts can either be physical or cycle counts (Gupta & Randhawa, 2008). A physical count is a planned process which is performed annually to count all items in inventory to verify the accuracy of the system inventory records (Cognizant, 2011). A store needs to prevent any changes in transactions
pertaining to inventory until the counting is completed (Gupta & Randhawa, 2008). The manually generated counts are compared with the system inventory records (Brooks & Wilson, 2007). If there is an acceptable level of variance, then the system inventory will be adjusted to the count that has been entered (Cognizant, 2011).

High levels of inventory accuracy are critical to the success of any warehousing operation (Tompkins & Ferrell, 2012). A proactive cycle count programme is the best way of combating issues pertaining to inventory accuracy (Gupta & Randhawa, 2008). A cycle count is defined as an ad hoc count process that can be requested by the inventory control department, or it can be initiated by the system (Cognizant, 2011). During the cycle count manual stock counts are done on all items (Brooks & Wilson, 2007). In the event that a discrepancy exists between the system inventory level and the amount in the count, the store manager may decide to correct the count in the system based on the inventory audits (Hartson & Pyla, 2012). This process is executed on a quarterly basis (Cognizant, 2011).

The counts of goods to be released as recorded by stock clerks should be independently verified by shipping clerks and the two counts should be compared before the goods are released (PCAOB, 2013). The releasing of goods from the warehouse should be on the basis of documented instructions from authorised staff that do not have access to such goods (American Institute of Certified Public Accountants (AICPA), 2003).

According to Ray (2010) replenishment planning is also an important part of an Enterprise Resource Planning (ERP) as it supports inventory that is vendor managed inventory which is commonly used for replenishing stock between warehouse and suppliers. An efficient and effective inventory management system will give a competitive edge to the business, irrespective of its nature (Sople, 2012). According to Harvest CFO Consulting (2013), an efficient and effective inventory management system results in satisfied customers coming back for more business in the near future. Effective inventory management systems are affected by lack of knowledge on the part of employees and it is a
major impediment to proper inventory management systems (Bragg, 2011). Inventory managers are in a position to establish the courses of action to take in order to create effective inventory management (Saxena, 2009). According to Harvest CFO Consulting (2013), corrective inventory management systems involve the training of employees in inventory management that also encompasses labelling, stocking ordering and tracking systems.

2.7 SHRINKAGE AND INVENTORY CONTROL SYSTEMS

According to Deloitte (2004), shrinkage is defined as the physical reduction in inventory mainly due to ineffective processes, customer and employee theft. Shrinkage in any business is the measure of how much loss is due to as a result of the product disappearing from the store (Gorbett, 2009). The average shrinkage rate in a normal retail environment is between 1.5% and 2% of total sales (Tracy, 2002). Shrinkage as a percentage of sales may be relatively small but its impact on the bottom line profit of a low-margin industry is significant, especially at a time when there is increased competition and a slowing economy (Deloitte, 2004). According to the study entitled Global Retail Theft Barometer by the Centre for Retail Research (2011) shoplifting, employee or supplier fraud, organized retail crime and administrative errors cost the retail industry $119 billion in 2011, or 1.45% of sales. According to Centre for Retail Research (2012) in 2000, European retailers’ stock loss accounted for €13.4 billion a year or €258 million per week. In Europe, 58% of all profit is lost through shrinkage (Deloitte, 2004). Zipking (2000) supported the fact that the most common type of shrinkage in retail organisations is caused either by customers or employees theft while Gorbett (2009) states that the single biggest cause of shrink is employee theft.

However, when inventory is being moved, stacked, stored, retrieved, and rotated, things get broken, parts get lost, items become mislabelled and grocery items such as vegetables and fruits spoil or become stale (Tracy, 2002). The shrinkage is revealed every time the company performs a periodic inventory count or a perpetual count (Zipking, 2000).
According to Trent (2008) a company should encompass a proper inventory management control in order to ensure that it has up to date product information at all times. Vital and accurate inventory information should be given to the customer irrespective of the fact that he or she does not intend to make a purchase on the very same day as part of good customer service (Hatch, 2007). Customer retention is enhanced through giving accurate information and this improves company performance (Anderson, 2012). Therefore, according to Ace Hardware Corporation (2010), it is important to have strategies that can be implemented to avoid stock losses which are as follows:

- Book inventory should be accurate all the times as it is the heart of the business (Ace Hardware Corporation, 2010). According to Ray (2010) any access to inventory and the capability to adjust should be limited to the fewest associates possible, consistent with operational needs.
- Inventory and price adjustments reviews which are critical should be done frequently for example on a weekly basis (Ace Hardware Corporation, 2010). The Inventory Transaction Register (ITR) can be used to conduct these reviews (Sennewald & Christman, 2011).
- To perform physical inventory count at the end of each year as well as effect adjustments of inventory on the difference between physical count and book value (Ace Hardware Corporation, 2010). All values for any adjustments done during the year must be maintained and should be available at the end of the year (Hartson & Pyla, 2012).
- To review various reports such as day end sales reports available in the inventory system that can provide warnings on wrongdoing or errors (Ace Hardware Corporation, 2010).
- There must be an access on the various viewers available in the system so as to provide red flags of dishonesty (Ace Hardware Corporation, 2010).
- Security controls must be put that limits the independence of cashiers in areas of refunds and voids (Ace Hardware Corporation, 2010).
• All back and side doors must be controlled in a way that prevents unmonitored exit (Ace Hardware Corporation, 2010).
• An effective deterrent way to theft is through the use of well configured CCTV systems at POS terminal and back door (Kruegle, 2011).

2.8 MANAGEMENT OF INVENTORY COSTS
According to Liyanage (2010), previous researches have shown that most managers’ decisions on inventory are based on intuition due to lack of knowledge in the area of inventory management that result in the use of the rule of thumb. Liyanage (2010) went on further to indicate that inventory decisions are not integrated with the strategic needs of the organisation as there is no involvement of users in the management of inventory. According to Neville (2012) a good inventory control system means that an organisation is in a position to continuously analyse sales, keep track of the movement of fast moving products and maintain product availability so as to meet customer order requirements. Anderson (2012) explained that an enterprise can identify those special orders that sell on occasion and ensure that the availability of such products is limited in order to cut down on inventory costs but with a view of being able to provide the orders quickly when needed by customers. According to Gattorna (2003) an effective inventory management system aims at controlling stock outs that result in loss of sales while at the same time reducing or avoiding over stocking that results in incurring of costs. According to Ecommerce Business Journal (2011) additional costs are incurred through having too much inventory while by having too little inventory, additional costs are paid for rushing and expedited shipping.

2.8.1 Carrying Too Little Inventory (Stock outs)
Stock out refers to a situation where a demand for goods is not met and this triggers the cancellation of an order (Vollmann et al., 2004). Carrying too little inventory results in a potential loss in sales as customers are turned away and might not be reluctant to come back again in the near future for repeat sales (Oracle Retail, 2012). According to Vollmann et al. (2004) the following are costs associated with stock outs:
• Increased risk of lost sales
• Increased ordering costs
• Increased risk of supplier price increases
• Increased exposure to non delivery
• Decreased bulk order discounts

According to Oracle Retail (2012) the biggest threat to a retailer is lost sales due to out of stock products or at worst case the store staff fails to locate an item. Gorbett (2009) indicated that an inventory system assist the store to maintain accurate stock positions as well as tracking the location of inventory which in essence saves a sale. Oracle Retail (2012) also indicated that a detailed itemised inventory can be used to generate an order in order to restock up to required levels.

2.8.2 Carrying Too Much Inventory (Overstocking)
The concept of overstocking is an extension of inventory carrying costs in the sense that it signifies the investment in inventory for a longer duration than necessary (Gopalakrishnan, 2004). Inventory management is very critical in the operations of a retail supermarket as managers are constantly faced with the day to day challenges of balancing the required inventory at any given time (Vollmann et al., 2004). Without inventory there is no doing business and as such, accumulating too much inventory than necessary results in tying up funds in assets that will not be fully performing hence the opportunity for alternative investment is lost (Gopalakrishnan, 2004). Prasad and Sinha (1990) shared the same sentiments that overstocking ties up capital unnecessarily thereby resulting in the loss of interest. According to Gorbett (2009), in trying to avoid overstocking the seller knows the value of his stock in order to come up with a price and on the same token the buyer needs to know how much to spend on stocking. Wilson (2006) stated that in the United States economy a huge amount of cost is recorded as the cost of holding inventory. Carrying too much inventory has financial implications to the retail supermarket and the following occurs according to Zipkin (2000):

• Increased overhead costs
• Increased financial holding costs
• Increased risk of loss of market value
• Decreased inventory flexibility
• Increased inventory shrinkage

When an organisation has a properly designed and controlled inventory management system, it can be able reduce the time that a product sits on the store shelf through a quick inventory turnover thereby reducing costs (Gorbett, 2009). According to Anderson (2012) inventory costs are reduced when an organisation avoids carrying additional inventory for indefinite periods of time. An integrated inventory planning and control system thus can give retailers the insight they need to understand the impact of fluctuations in supply and demand (Oracle Retail, 2009). Suppliers and retailers have realized that good communication between the two can result in profitable businesses (Oracle Retail, 2009).

2.8.3 Inventory Cost reduction strategies
According to Ecommerce Business Journal (2011) all businesses regardless of sizes that are involved in inventory management must ensure that they monitor various methods to reduce inventory costs. Cost reduction strategies does not only contribute to higher performance, but enhances a competitive edge against competitors (Gibbert, 2010). In trying to reduce costs, quality is compromised as cheaper suppliers are sought whilst there are other strategies that can be used without reducing costs (Oracle Retail, 2009). Below are the strategies used in reducing inventory costs in an organisation.
### Table 2.2: Inventory cost reduction strategies.

| 1. Streamline Processes | - Evaluate current methods being used for seasonal planning, weekly forecasts, and quarterly analysis.  
|                         | - Check on efficient utilisation of time by employees in communicating with suppliers.  
|                         | - Use purchase orders (PO) numbers when communicating with suppliers and between stores and warehouse to save on confusion and misunderstanding.  
|                         | - Reduction of the number of employees in the decision making process. |
| 2. Analyse charges       | - Examine statements and invoices on a monthly basis for unknown charges or those that you do not understand.  
|                         | - Review on a monthly basis a warehouse report that shows which products are warehoused and verify if they belong to the company to avoid being charged for storing another company’s products.  
|                         | - Reorganising products that can be reduced for example bundling two items together. |
| 3. Demand Forecasting    | - Avoid under and over stocking so that the correct inventory level is maintained. |
| 4. Stock Kit Unit (SKU) clearance. | - Review current and historical sales reports to check if any products are experiencing a decline in demand.  
|                         | - Reduce prices to clear non moving items as the cost of holding is more than the expected profit. |
| 5. Reduce Lead Time.     | - Work with suppliers on ways to improve goods into stock through supplier integration. The quicker products get into inventory the lower the level of inventory to be stored thereby reducing holding costs. |
| 6. Avoid Quantity Discounts. | - Avoid ordering more in order to enjoy quantity discounts as these results in higher overall inventory costs as additional inventory result in additional storage costs which may be higher than the discount. |

Source: Ecommerce Business Journal (2011)
2.9 INVENTORY CONTROL MODELS

According to Rachlin (1997) an inventory control model is a technique that is used to manage inventory and seeks to address when an order must be placed and how much is to be ordered. In cases where partners in the supply chain manage inventory effectively and efficiently, there will be less interruptions in production process, reduction in storage cost, product availability and many other organization specific quantitative and qualitative benefits leading to the organizational performance (Liyanage, 2010). According to Dion (2003) many retailers have installed software and hardware in their stores over the years with the intention of collecting sales data, inventory ordering and tracking inventory and have also added customer profiling to manage customer loyalty to enhance business performance.

2.9.1 Economic Order Quantity

An economic order quantity (EOQ) according to Vohra (2006) is the level of inventory that seeks to minimise the ordering and holding costs. EOQ is also referred to as the classical inventory model for stock held on cycle with assumptions that demand and production lead times are known (Zipkin, 2000). The objective of EOQ is to choose an order quantity that minimizes the marginal annual costs for ordering and holding (Anderson, Sweeney, Williams, Camm & Martin, 2010). Below is the diagrammatical representation of an EOQ model.
According to Anderson et al. (2010) the EOQ model’s objective is to determine a trade-off between ordering cost and storage cost when deciding on the quantity to be used in replenishing inventory. A larger order reduces the frequency of ordering and hence costs are also reduced whilst holding costs of larger inventories will rise (Anderson et al., 2010). According to Schwarz (2008) smaller orders results in lower inventories and more regular ordering thereby resulting in an increase in ordering and holding costs. The EOQ model thus assumes the following conditions according to Anderson et al. (2010):

a) **Customer Demand**- According to Schwarz (2008) and Anderson et al., (2010) customer demand is assumed to be known and it is constant. Lucey (2002) also concurred that in an EOQ Model, customer demand is known.

b) **Lead time**- According to Lucey (2002) and Plennert (2002) EOQ assumes that there is no time lag between the time of ordering and delivery and hence replenishment is immediate. It also assumes that the order lead-time which is the time interval between placing the order and receiving the quantity is zero (Anderson et al., 2010). The concept of when and how much to order is
conveniently removed (Schwarz, 2008). It also assumes that if the lead-time is one week, then order quantity inventory equals a week’s supply (Lucey, 2002).

c) Costs – According to Plenert (2002) the EOQ model accounts for the following three costs which are: the cost of purchasing the units that is the price of the units themselves, the cost of holding the units and finally manufacturing set-up cost. The purchase price of the units is assumed to be fixed irrespective of the number of the units manufactured or ordered (Anderson et al., 2010). This is despite the fact that other economies of scale such as quantity discounts are ignored in the basic EOQ model (Schwarz, 2008).

i) Advantages of EOQ Model
According to Plenert (2002) EOQ is the most popular model and it is easy to use and understand. EOQ is regarded as a model that smoothes out the restocking processes and results in improved customer satisfaction (Schwarz, 2008).

ii) Disadvantages of EOQ Model
According to Schwarz (2008) EOQ is not easy to understand due to mathematical calculations involved especially to those lacking in mathematical skills. It is a model that is based on assumptions and this is one of its pitfalls (Plenert, 2002).

2.9.2 Just In Time (JIT)
According to Plenert (2002) JIT inventory control model refers to an inventory management system whose aim is to have inventory readily available when needed to meet demand and this inventory levels should not result in overstocking. It is a model of inventory management that gets the product from the supplier to the retailer as close to its time of purchase as possible (Holt, Klutts, Aldendifer, Hafermann, Hines, & Rhodes, 2012).

JIT systems control and balances the work flow by bringing in and sending out materials or goods demanded which are just adequate to provide what the consumer wants and nothing less or more (Williams, 2012). Hutchins (1999) described JIT as a system whose primary goal is to achieve a zero inventory policy throughout the whole supply chain management and not just the entire organisation.
i) Advantages of JIT
JIT inventory control model results in a reduction in raw material stocks therefore reducing an investment in stocks (Drury, 1994). According to Weele (2010) the supplier is constantly aware of the quantities to be supplied on the next order and hence this eliminates delays in delivery of materials or products.

ii) Disadvantages of JIT
According to Holt et al. (2012) the JIT method does not get products to their final location fast enough. When things like natural disasters destroy one store in the supply chain, the whole supply chain is disrupted (Holt et al., 2012). Another disadvantage according to Williams (2012) is that companies that would require smaller orders may face difficulties in meeting the minimum order over a specified period of time. The goods that are delivered by suppliers must be of good quality in order to avoid instances of plant shutdowns due to defective materials (Lai & Cheng, 2009).

2.9.3 Materials Requirements Planning (MRP)
Material Requirements Planning (MRP) is a model involved in production planning and inventory control that seeks to manage the manufacturing processes (Holt et al., 2012). Lucey (1998) defined it as a computerised information, planning and control system whose aim it to maintain and smoothen the production flow maximising the efficiency in manufacture and assembly of the final product. Its origin is dated back to the early 1960s as computerised system for coordinating the planning of materials acquisition and production (Drury, 1994). Drury (1994) went on further to indicate that it is perceived as a control system which only orders the right components that are needed to maintain the flow of production in the manufacturing of products.

i) Advantages of MRP
Some of the reasons to use MRP are that it reduces inventory levels, improves shipping performance and reduces purchasing cost (Holt et al., 2012). According
to Klassen and Menor (2005) MRP also focuses on ensuring that customer desired products or materials are readily available.

ii) Disadvantages of MRP
A major problem with the system is the accuracy of the data though this can be improved by pull systems and bar code scanners (Williams, 2012). According to Wisner (2011) MRP depends on projected values and estimated lead-time that can be misleading at times.

2.9.4 ABC Classification Model
According to Klassen and Menor (2005) one of the main aims of ABC is to classify inventory based on the levels of importance in the organisation. This according to Drury (1994) involves the classification of tens of thousands of products in large firms into groups in decreasing order of annual cost. According to Vollmann et al. (2004) an inventory system must specify when an order is to be placed, how many units to be ordered and the most important aspect is that there are so many items involved that it is not practical to model and give a thorough treatment to each item. In order to get around the issue of many items, the ABC inventory classification scheme is used to divide inventory items into high dollar volume (A), moderate dollar volume (B), and low dollar volume (C) categories (Murthy, 2007). The dollar volume measure is of importance and an item low in cost but high in volume can be more important than a high-cost item with low volume (Lucey, 1998).

The example in Figure 2.3 shows that items A which constitute 20% of the stock items make up about 76% of the dollar value. This therefore implies that more control measures must be put on items A than B and C which have lower dollar values (Klassen & Menor, 2005).
Figure 2.3: ABC Classification Model
Source: Klassen and Menor (2005)

i) Advantages of ABC Model
The model helps to identify and classify inventory of high value and ensures that tight controls, physical security and frequent audits are done while those in class B and C will require less stringent controls (Klassen & Menor, 2005). Managers can also maintain accurate records that can be used for decision making purposes (Wisner, 2011).

ii) Disadvantages of ABC Model
According to Murthy (2007) the classification of inventory does not reflect the frequency in which inventory moves and hence it can misled stock controllers. Klassen and Menor (2005) on the other hand indicated that inventories in
categories B and C can be neglected and thus can be prone to pilferage and poor record keeping.

2.10 EMPirical CASE

2.10.1 Wal-Mart: An Example of Inventory Management
Retailing is one of the largest sectors in the global economy and it has gone through a transitional phase as traditionally it was dominated by smaller family businesses but this is increasingly being overtaken by the emergency of conglomerates such as Wal-Mart indicating the era of retail globalisation (Roberts & Berg, 2012). Wal-Mart is one of the largest retail companies in the world with an annual turnover of $419 billion in 2010 (Deloitte, 2010). This revenue grew to $443.8 billion in 2012 according to Wal-Mart Annual Report (2012). This has been achieved through among other things, the encompassing of information technology through enhancing a solid supply chain management which integrates into its ordering and supply system (Roberts & Berg, 2012). Instead of storing large quantities in its stores, products are only delivered when stocks fall to the reorder levels (Carioles, 2001).

Wal-Mart makes use of the JIT model to a larger extent as it has a wider supply chain network and there is integration with most of its larger suppliers (Roberts & Berg, 2012). Through the use of satellite technology Wal-Mart has been able to reduce ineffective inventory in its stores while each store manages its own inventory (Pradhan, 2009). According to Jennings (2011) satellite technology also assisted in cutting back on funds used or spent on inventories that are not demanded by customers. This technology according to Global Powers of Retailing (2010) helps businesses to get products where there are needed to go.

2.11 LESSONS DRAWn FROM LITERATURE REVIEW
The literature review showed various insights on the role of Inventory Management in enhancing business performance. The major issue which came out was that the management of inventory has an effect on business performance.
2.11.1 Inventory management systems
Literature has shown that inventory management systems have to be put in place so as to enhance business performance. The availability of inventory in a retail supermarket is very critical. Inventory management policies are therefore designed and implemented to control the availability of stocks in the business. This is also aided by the application of inventory management process flow which according to Anderson (2012) is meant to check on product availability, establish purchasing patterns and monitor obsolete products.

2.11.2 Shrinkage and inventory control
Inventory shrinkage in a retail grocery store occurs through various ways such as employee and customer theft and it is critical that it is reduced to acceptable levels. According to Gorbett (2009) the normal level in a retail environment must be between 1.5% and 2%. Various inventory management strategies must be employed to reduce shrinkage in order to reduce the costs associated with inventory loss.

2.11.3 Management of inventory costs
Literature has shown that the management of inventory costs should be done through the employment of better strategies to deal with stock outs and overstocking. Inventory control models such as EOQ, JIT, MRP, and ABC are critical aspects of managing inventory costs.

2.12 CHAPTER SUMMARY
This chapter explored the work that has been undertaken on Inventory Management. Theoretical and practical aspects of Inventory Management have been developed and reviewed by several authors. However, the review of the literature has not been conclusive enough hence the researcher shall explore a primary investigative analysis and Chapter 3 provides the research methodology.
CHAPTER THREE: RESEARCH METHODOLOGY

3.0 INTRODUCTION
This chapter seeks to provide an overview of the strategy that will be used to conduct the research and collect the necessary data for interpretation and analysis. It will discuss the research methodology covering research design, philosophy, approaches, strategies, study population, sampling methods, data collection and analysis, ethical considerations and research limitations.

3.1 RESEARCH DESIGN
According to Punch (2005), research design is concerned with how data is analysed and gathered. Various techniques can be used to gather information that can be used to undertake a meaningful research task (Ferrante, 2012). Research design can be further described by Burns and Grove (1997) as an outline for the accomplishment of a study that make the most of control over those factors that hinder the study’s anticipated results. The two research designs are distinguished, as quantitative and qualitative (Ryan, 2008).

According to Muijs (2010) quantitative research design is the standard experimental method of most scientific disciplines. These experiments make use of a standard format, with small inter-disciplinary differences generating a hypothesis to be proved or disproved as opposed to qualitative research (Shuttleworth, 2008). Ferrante (2012) urged that such hypothesis must mathematically be verifiable with standard means and the basis around which the entire experiment is designed. Ryan (2008) went further by describing qualitative design as an extensively used method of experiment by scientists and researchers studying the habits and behaviour of human beings. Qualitative research is viewed as a forerunner to quantitative research that is used to generate possible ideas and leads that can be used to generate a testable and realistic hypothesis (Shuttleworth, 2008). Research design is divided into two parts according to Burns and Grove (1997) which are the research philosophy and approaches on data collections methods.
3.2 RESEARCH PHILOSOPHY

According to Saunders et al. (2005) research philosophy depends on the way that an individual thinks about the development of knowledge. There are two research philosophies. According to Ferrante (2012) these are the phenomenological paradigm, which is qualitative and positivist paradigm, which is quantitative.

3.2.1 The positivist paradigm

Saunders et al. (2005) defines positivism research philosophy as the one that involves working with social reality that is observable. According to Miller and Deutsch (2010) the positivist paradigm argues that the researcher should be able to explain phenomena in regards to the causes of the behaviour we observe. This methodology underpins the cause and effect of the phenomenon under study (Punch, 2005). Baker (1994) confirms that under positivism, knowledge is absolute and that is why hypothesis testing is done in order to ascertain if a particular body of knowledge is false or true.

3.2.2 The phenomenological paradigm

According to Woodside (2010) phenomenological paradigm is based on the belief that reality exists which is independent of human thoughts and beliefs. The ontological discussion between phenomenological paradigms assumes that the business world exists independently of one’s appreciation of it whilst nominalism assumes that the business world is external to individual cognition and is made up of concepts and labels which are structure reality (Silverman, 2003). Collins (2010) concluded that is also of the view that realism emphasises on observation and that you can separate the research from the subject.

The researcher applied the triangulation method which according to Amoretti and Preyer (2012) refers to the use of more than one approach to investigate the research questions so as to enhance confidence in the research findings. A phenomenological paradigm was applied in this research to assess management’s use of inventory management systems. This philosophy was used by the researcher to validate the research findings that can be reduced since
positivism approach could not reliably measure independence of human thoughts and beliefs of the respondents at GCS. In this study, positivism approach was also adopted because it allows for economical collection of data, clear theoretical focus for the research, researcher control of the research process and easily comparable data. GCS in Harare has gone through years of an increase in economic activity and a spell in decrease in performance. This quantitative data which was compiled managed to show that there is a problem associated with inventory management and it needed to be addressed by GCS.

3.3 RESEARCH STRATEGIES
Research strategy is a theoretically informed technique for collecting and analysing empirical data (Eriksson & Kovalainen, 2009). According to Punch (2005) it is a set of information by which the study intends to answer the research questions. Research strategy can either be qualitative or quantitative (Amoretti & Preyer, 2012). The main qualitative strategies found in literature include the case study, grounded theory, ethnography, focus group, action research and feminist research. The quantitative strategies follow the positivism epistemology and the common methods are the survey and the experiments.

3.3.1 Experiments
Experiments are set up to study possible cause effect relationship among variables (Sekaran, 2003).

3.3.2 Grounded Theory
It is a research strategy that attempt to develop theoretical ideas from the data collected and it is conducted over a long period of time (Eriksson & Kovalainen, 2009).

3.3.3 Focus Group
A focus group is described by Eriksson and Kovalainen (2009) as a strategy of collecting qualitative data through interaction and discussions. A group of people are gathered together by the moderator to discuss their individual experiences and viewpoint on particular issues and topics (Punch, 2009).
3.3.4 Action research
According to McNiff (2002) action research refers to a practical way of looking at the research work to check if it is what the researcher would desire it to be. Therefore, this involves close collaboration and realistic problem solving as part of the research (Eriksson & Kovalainen, 2009).

3.3.5 Feminism
According to Eriksson and Kovalainen (2009) feminism is a strategy that gathers a wide range of ideas, where the main importance is on gender bias, concepts, theories and sciences structure.

3.3.6 Case study
Yin (2011) described a case study as an in-depth study of people, organisation, processes, holistically and in their social, economic and cultural context. Punch (2009) highlighted that it is possible to use whatever method that is appropriate to study the case in detail for example a survey. According to Eriksson and Kovalainen (2009) the weight is on production of comprehensive and holistic knowledge, which is based on the analysis of rich multiple empirical sources.

3.3.6.1 Advantages of Case study
According to Blaxter, Hughes and Tight (2010) a case study allows a lot of detail to be collected that would not normally be easily obtained by other research designs. The data collected is normally a lot richer and of greater depth than can be found through other experimental designs (Eriksson & Kovalainen, 2009). Case studies can also help experimenters adapt ideas and produce novel hypotheses which can be used for later testing (Collins, 2010).

3.3.6.2 Disadvantages of case study
One of the main criticisms according to Mustafa (2008) is that the data collected cannot necessarily be generalised to the wider population. This leads to data collected over longitudinal case studies not always being relevant or particularly useful (Collins, 2010). Secondly, it is not easy to draw a definite cause or effect from case studies (Eriksson & Kovalainen, 2009).
This study is a case study; however the study uses a survey method where the questionnaire was used to gather data from the respondents. Furthermore, the technique allowed the researcher to probe deeper into the problem under study in the retail sector. GCS had been facing challenges in its business performance due to its failure to manage inventory from 2009 to 2012. Inventory management is a contemporary phenomenon that has problems for the retail sector and the case study design was used to empirically investigate the situation in order to come up with a solution. The period of 4 years in which GCS has experienced challenges in inventory management thus created a case that would help the researcher to come up with possible solutions that could assist the retail industry as a whole. The descriptive survey strategy was used, for which the researcher did not have enough time to analyse the entire population.

3.3.7 Survey
A survey is a data collection tool used to gather information about individuals (Sapsford, 2005). According to Easterby-Smith, Thorpe and Lowe (2004) the main purpose of this tool is to gather information about a defined set of population. Surveys can be divided into analytic and descriptive survey (John & Johnson, 2002). Analytic surveys according to Mitchell and Jolley (2012) tries to analyse a theory by taking the logic of the experiment out of a laboratory and into the field. According to Babbie (2010) in contrast to analytic surveys, descriptive surveys are primarily concerned with dealing with the particular characteristics of a specific population at a fixed or varying point in time for comparative purposes.

3.3.7.1 Advantages of Using Surveys
Mitchell and Jolley (2012) viewed surveys as a strategy that allows researchers to collect a large amount of data in a relatively short period of time. Surveys according to Blaxter, Hughes and Tight (2010) are less expensive than many other data collection techniques. Surveys can be created quickly and administered easily. Surveys can be used to collect information on a wide range of things, including personal facts, attitudes, past behaviours and opinions.
3.3.7.2 Disadvantages of Using Surveys
If a survey is poorly constructed and administered, it can undermine a well designed study (Easterby-Smith et al., 2004). According to Mitchell and Jolley (2012) response rates can bias the results of a survey if random sampling is generally used to select participants.

3.4 STUDY POPULATION AND SAMPLING TECHNIQUES

3.4.1 Population
According to Wegner (1993) a population refers to all the observations of a random variable under study. Babbie (2010) concur that a population is a total collection of the elements that a researcher would desire to make some inferences on. The total study population of GCS is made up of three (3) branches in Harare which are as follows: Harare Street Branch (33 Employees), Nelson Mandela Branch (55 Employees), and Glen View 8 Tichagarika Branch (25 Employees). The target population under study is illustrated in Table 3.1.

Table 3.1: Study Population

<table>
<thead>
<tr>
<th>POPULATION COMPOSITION</th>
<th>STUDY POPULATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>HARARE STREET</td>
<td>33</td>
</tr>
<tr>
<td>NELSON MANDELA</td>
<td>55</td>
</tr>
<tr>
<td>GLENVIEW 8</td>
<td>25</td>
</tr>
<tr>
<td>TOTAL STUDY POPULATION</td>
<td>113</td>
</tr>
</tbody>
</table>

3.4.2 Sample Selection and Sample Size
According to Wegner (1993) a sampling technique provides a variety of ways that allows one to reduce the amount of data only from a subgroup rather than all possible elements. Population is a full set of cases from which a sample is taken (Saunders et al., 2005). The study population for GCS was 113 employees.
Mitchell and Jolley (2012) explained that researchers work with a sample of subjects rather than the full population.

There are however two basic methods of sampling that are probability and non-probability sampling.

### 3.4.2.1 Probability sampling

Agarwal (2009) defined a probability sample as a sample selected by a method involving knowledge of the chances of any unit being selected. Aaker, Kumar and Day (1998) explained that in probability sampling each element has an equal opportunity of being selected. Baker (1999) argued that a probability sample should try to represent the entire population but can never be an exact imitation. According to Babbie (2010) the chances of each case being selected is known and the chance is also equal for all cases.

**i) Advantages of probability sampling**

The main advantage of probability sampling is fairness, for example in competition where participants’ names are selected from a box full of entry forms (Maxfield & Babbie, 2011). Probability sampling also provides the most valid outcome because they reflect the characteristics of the population from which they are selected (Gravetter & Forzano, 2011).

**ii) Disadvantages of probability sampling**

There is a possibility of flaws to the randomness model where people may cheat or interfere with the system (Maxfield & Babbie, 2011).

Zikmund (2000) identified probability sampling in the following three basic sampling methods; simple random, stratified random and cluster sampling.

**a) Simple random sampling**

Babbie (2012) defined a simple random sample as a subset of large population created in such way that each element of the population has an equal probability
of being selected to the subset. For instance, a simple random sample of twenty people from a given geographical area will on average produce ten men and ten women, but any given trial is likely to over-represent one sex and under-represent the other (Zikmund, 2000).

i) Advantages of Simple random sampling
Highly representative if all subjects participate (Babbie, 2012). The technique can also be easily understood while at the same time the results of the survey can be generalized to the distinct target population with a pre-specified margin of error (Zikmund, 2000).

ii) Disadvantages of Simple random sampling
The major drawback of the simple random sampling is the difficulty of obtaining complete, current and accurate listing of the target population elements (Maxfield & Babbie, 2011). Simple random sampling process requires all sampling units to be identified, which would be cumbersome and expensive in case of a large population; hence this method is most suitable for a small population (Mitchell & Jolley, 2012).

b) Stratified random sampling
According to Black (2011) the population is divided into sub population (strata) based on one or more classified criteria. Simple random samples are then drawn from each stratum in sizes proportional to the relative size of each stratum in the population (Kothari, 2009). Babbie (2012) explained that the researcher should ensure that there is perfect homogeneity in the different units of strata when constructing the strata.

i) Advantages of Stratified random sampling
Stratified random sampling can ensure the assurance of proportional representativeness of specific groups in the sample (Black, 2011). Stratified random sampling also has the ability to make estimations for the target population with the expectation of greater accuracy or less error (Kothari, 2009).
ii) Disadvantages of Stratified random sampling
It is more complex, requires greater effort than simple random and the strata must be carefully defined (Black, 2011).

c) Cluster sampling
According to Gravetter and Forzano (2011) it is a method in which participants or individuals in the population are grouped into existing groups prior to sampling. According to Saunders et al. (2005) a random sample of these clusters is then drawn. Black (2011) observed the similarity of cluster sampling to stratified sampling which involves the classification of population into groups that are distinct and normally used when the population is big and geographically spread.

3.4.2.2 Non-probability sampling
Non probability sampling according to Sekaran and Bougie (2010) is defined as a technique where individual elements in the population are not given the same probability of being selected and also that the chance is not known. This method offers a variety of alternative techniques which are based on subjective judgement (Rubin & Babbie, 2011). Saunders et al. (2005) explained that a non probability method is a practical method regardless of the fact that it does not permit a determination of the degree of a problem if used under a pilot survey. Kothari (2009) indicated that there are a range of non-probability sampling techniques that could be used and these are, quota sampling, purposive sampling, snowball sampling and convenience sampling.

a) Quota sampling
According to Sekaran and Bougie (2010) quota sampling technique is completely non–random and is usually used for interview surveys. According to Blaxter et al. (1997) this type of sampling is suitable when the characteristic of the population under study is known for example gender, occupation and age group.
b) **Purposive sampling (judgemental sampling)**

According to Sekaran and Bougie (2010) it is a technique that targets a certain type or group of people that can provide the required information. According to Bernard (2000) this sampling method is appropriate when working with small samples in a case study.

c) **Snowball sampling.**

This sampling method is used when it is not easy to recognize members of the required population (Sekaran & Bougie, 2010). With snowball sampling the first step is to identify the first respondent who then will lead to the next respondent (Rubin & Babbie, 2011).

d) **Convenience sampling**

According to Black (2011) convenience sampling is a technique where the selecting of elements in the population is based on convenience and this includes availability, how near the element is and the willingness to participate. Black (2011) went on further to give examples such as interviewing shoppers who pass through the shop or those people that are in a shopping centre to participate in a television programme.

### 3.4.3 Gutsai Convenience Stores’ Sample selection and size

Considering the nature of research the researcher used the probability sampling methods as it is the most relevant method.

<table>
<thead>
<tr>
<th><strong>Table 3.2: Sample size</strong></th>
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<tbody>
<tr>
<td><strong>SAMPLE COMPOSITION</strong></td>
</tr>
<tr>
<td>HARARE STREET</td>
</tr>
<tr>
<td>NELSON MANDELA</td>
</tr>
<tr>
<td>GLENVIEW 8</td>
</tr>
<tr>
<td><strong>TOTAL SAMPLE</strong></td>
</tr>
</tbody>
</table>
In coming up with the sample for GCS, the researcher employed stratified random sampling to categories all GCS branches in Harare. The researcher further used stratified random sampling to categories employees in each branch according to managerial and non-managerial levels. From the two strata’s created at each branch the researcher then selected managerial employees to come up with a sample that represented GCS in the study. The researcher selected managerial employees as there are the ones who are involved in the managing and controlling of inventory in the branches. The managerial employees comprised a total 28 employees (Harare (7), Nelson Mandela (14), and Glen View (7). The researcher then used simple random sampling technique to select proportionally from each strata to come up with Harare Street Branch (5 Managerial Employees), Nelson Mandela Branch (10 Managerial Employees) and Glen View 8 Branch (5 Managerial Employees). Stratified random sampling technique was chosen amongst the other methods as the population is known and has homogeneous characteristics.

3.5 DATA COLLECTION METHODS
Although there are so many data collection techniques, the researcher used primary data and secondary data (Black, 2011).

3.5.1 Primary Data
This method is used when the data collected is used specifically for the research project being undertaken (Sekaran & Bougie, 2010). The researcher collected primary data after developing and distributing the questionnaire to participants at GCS.

3.5.2 Secondary data
According to Saunders et al. (2003) secondary data is the data that has already been collected and readily available from other sources. Such data according to Black, (2011) is cheaper and more accessible than the primary data. Secondary data was used to gather information on inventory management. The researcher used various text books and other reports from various bodies which included the journal publications, internet and business articles from newspapers.
3.6 DATA COLLECTION INSTRUMENTS

3.6.1 Interviews
According to Sekaran and Bougie (2010) an interview provides in-depth information about a particular research issue or question. The information collected in interviews is not quantifiable (i.e., not amenable to statistical analysis) and therefore the interview is often described as a qualitative research method (Agarwal, 2009).

3.6.1.1 Advantages of interviews
According to Punch (2009) the advantages of using the interview technique approach are that the respondents can expand on areas of interest and uses non-verbal cues such as facial expression to emphasis their response.

3.6.1.2 Disadvantages of interview
The major disadvantage is that it is time consuming and costly (McNiff, 2002). Rubin and Babbie (2011) also explained that it requires further training of the interviewer to be able to adapt and probe more in line with the objectives of the research exercise.

3.6.2 Questionnaires
According to Kothari (2009) a survey is a research method that is used to gather information from a group of people through the use of a questionnaire. Frazer and Lawley (2000) put it as a set of questions used to acquire information from respondents. It is essential to write the questions and set up the questionnaire for the development of a survey research design (Zigmund, 2003). The instruments chosen for this research is the self administered questionnaire.

3.6.2.1 Advantages of questionnaire
Questionnaires are more objective as responses are gathered in a standardised way and generally it is relatively quick to collect information using a questionnaire (Blaxter, Hughes & Tight, 2010). Information from a questionnaire can be collected from a large portion of a group (Punch, 2009).
3.6.2.2 Disadvantages of questionnaires
According to Agarwal (2009) questionnaires are standardised so that it is not feasible to give explanation of any points in the questions that participants might misunderstand. Like many evaluation methods, participants may forget important issues (Sekaran & Bougie, 2010).

3.6.2.3 Questionnaire Components
According to Baker (1999) the design of the questionnaire as a research instrument enables the respondents to express their opinions better, choose their own responses and feel more comfortable when providing their responses.

The questionnaire consists of three sections. The areas covered the key research objectives which are inventory management systems, shrinkage and inventory control and inventory costs. The questionnaire started by introducing the researcher and the research that was being carried out. It also gave the respondents assurance that the information they were providing was going to be treated with utmost confidentiality. The questionnaire distributed to GCS managerial employees comprised of both open-ended and closed questions, which enabled the respondents to give more in-depth responses. The closed questions were supported with 2 to 5 likert scaled responses. Open ended questions were also asked to further probe the respondents to give their opinion about issues to do with inventory management at GCS.

3.6.2.4 Questionnaire Pre-test
According to Zigmund (2003) a pre-test is a test run with a group of respondents, used to find problems with the questionnaire design. In fact, Punch (2009) further explained that a pre-testing is done to check if it is viable to collect the relevant information the researcher needs. Before sending out the final copy of the questionnaires, it was pre-tested at one of the retail supermarkets (other than GCS) in Harare to test if it was addressing the research problem at hand.
3.7 RESEARCH PROCEDURE

3.7.1 Data presentation
For purposes of presentation the researcher used tables, bar charts and pie charts to present the data appropriately.

3.7.2 Data Analysis Technique
Data analysis will start with data processing. Data processing begins with data editing and coding (Zigmund, 2003). Once the questionnaires were picked there were screened for anomalies. Data analysis involved both qualitative and quantitative methods. This research involved some numerical data that is usefully quantified to help the researcher answer questions objectively. Where it was not possible to use quantitative data, qualitative methods were used.

3.7.3 Ethical Considerations
The research was in line with ethical guidelines in that participation was voluntary and confidential. The employees were free to participate in the research. The responses were kept as confidential as possible and no names were asked for the respondents to avoid intimidation. No name or identification was required from the employees at GCS.

3.7.4 Research Limitations
Due to lack of sufficient time since the researcher is in full time employment, the researcher had to utilize his weekends and public holidays to ensure that he reached the deadline to complete the research.

The research was conducted during working hours and most of the participants were in meetings and attending to shop operations. The researcher had to be patient to ensure that he got the support he required for the research to be a success.

3.8 CHAPTER SUMMARY
This chapter focussed on the research methodology that the researcher used in order to decisively deal with the research problem addressed in Chapter One. The researcher made use of a questionnaire to collect primary data. These were
distributed to managerial employees to gather primary data to address the problem of inventory management at GCS. The next chapter will discuss and analyse the results of the questionnaires that were attained in the primary investigation.
CHAPTER FOUR: RESULTS AND DISCUSSION

4.1 INTRODUCTION
This chapter discusses and analyses the findings of the study from the questionnaires that were distributed and returned to the researcher. The researcher started by analysing the response rate of the respondents at GCS before analysing the results using different pictorial figures. The researcher also used secondary data collected in Chapter two to discuss the results on inventory management at GCS. The chapter ended with a summary.

4.2 RESPONSE RATE
Table 4.1: Response Rate

<table>
<thead>
<tr>
<th>SAMPLE COMPOSITION</th>
<th>ADMINISTERED QUESTIONNAIRES</th>
<th>COMPLETED QUESTIONNAIRES</th>
<th>RESPONSE RATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>HARARE STREET</td>
<td>5</td>
<td>4</td>
<td>80%</td>
</tr>
<tr>
<td>NELSON MANDELA</td>
<td>10</td>
<td>9</td>
<td>90%</td>
</tr>
<tr>
<td>GLENVIEW 8</td>
<td>5</td>
<td>5</td>
<td>100%</td>
</tr>
<tr>
<td>TOTAL SAMPLE</td>
<td>20</td>
<td>18</td>
<td>90%</td>
</tr>
</tbody>
</table>

Table 4.1 shows the response rate of the questionnaires that were sent out by the researcher to GCS Managerial Employees. The researcher chose this group because of their knowledge and involvement in inventory management. Out of the 20 questionnaires that were sent out, 18 were completed and returned. The average response rate was 90%. This rate is high enough to warrant the researcher to continue with the analysis of results.
4.3 PART 1: INVENTORY MANAGEMENT SYSTEMS

4.3.1 Do you have an inventory management system in place?

Figure 4.1: Do you have an inventory system in place?

Figure 4.1 sought to analyse whether GCS has an inventory management system in place. The results show that 100% of the respondents indicated that there was an inventory management system in place. The results suggest that the organisation has an inventory system in place at GCS. This system is important to the organisation in managing the stock movement. Vollmann et al. (2004) supported this by indicating that an inventory system is the set of policies and controls that monitor levels of inventory and determine what levels should be maintained, when stocks should be replenished, and how large orders should be.
4.3.2 Inventory management control system in the organisation.

The statistics in Figure 4.2 seek to assess the inventory management control system used at GCS. The results show that 100% of the respondents indicated that there is a perpetual inventory control system in place. A perpetual inventory control system allows GCS to continuously monitor inventory in its branches in Harare. The reason why they might be using this system is because their inventory management system is computerised and management need to have up to date information as far as inventory is concerned. According to Rittenberg, Johnstone and Gramling (2009) a perpetual inventory system can allow the organisation to access current inventory in real time and also has a facility to identify products to be ordered, those on the shelves, in storerooms and those that might be obsolete.
4.3.3 Inventory valuation method used in the organisation.

Figure 4.3: Inventory valuation method used in the organisation

Figure 4.3 above show that 100% of the respondents indicated that GCS use FIFO as an inventory valuation method. The results show that GCS use FIFO as an inventory valuation method in its operations. FIFO stock valuation method is commonly used in supermarkets as in the case of GCS. Goods that are received first are also the first ones to be sold. According to Prasad and Sinha, (1990) FIFO is a stock valuation method were the cost of goods sold is based upon the cost of material bought earliest in the year, while the cost of inventory is based upon the cost of material bought later in the period.
4.3.4 Frequency of inventory counts

Figure 4.4: Frequency of inventory counts

Figure 4.4 seek to assess the frequency of inventory counts at GCS. The statistics show that 78% of respondents do stock counts on a weekly basis and 22% do them on a monthly basis. The results show that the majority of respondents indicated that they do inventory counts on a weekly basis. The departments that are affected with these weekly inventory counts comprise of the delicatessen, bakery, butchery, liquor and fruit and vegetables. The rest of the store normally does these stock counts at the end of the month while some stores do them on a weekly basis. Tompkins and Ferrell (2012) stated that one of the best ways to combat inventory accuracy issues lies with a proactive cycle counting program. High levels of inventory accuracy are therefore critical to the success of any warehousing operation (Tompkins & Ferrell, 2012).
4.3.5 Clearly stated and communicated inventory policies and procedures

Figure 4.5: Clearly stated and communicated inventory policies and procedures

Figure 4.5 seek to analyse if there are clearly stated and communicated inventory policies and procedures at GCS. Of the total respondents, 6% strongly agreed and 16% agreed that the organisation had clearly stated and communicated inventory policies and procedures while 11% were neutral and 67% disagreed. The statistics clearly show that GCS does not have clearly stated and communicated inventory policies and procedures. Effective inventory management systems are affected by lack of knowledge on the part of employees and it is a major distraction to proper inventory management systems (Harvest CFO Consulting, 2013).
4.3.6 Inventory management training sessions

The statistics above seek to evaluate if GCS is conducting Inventory management training sessions. The results showed that 22% of the respondents indicated there are training sessions while 78% indicated that there are no training sessions. The results show that the majority of the staff are not involved in training on inventory management. This has an impact on how inventory is managed and controlled in the organisation. Inventory managers are in a position to establish the courses of action to create effective inventory management. According to Harvest CFO Consulting (2013) corrective inventory management systems involve the training of employees in inventory management that also encompasses labelling, stocking ordering and tracking systems.
4.3.7 To what extend has inventory management been able to assist to maintain product availability?

Figure 4.7: To what extent has inventory management been able to assist to maintain product availability?

Figure 4.7 seeks to analyse the extent to which inventory management has been able to assist in maintaining product availability. Of the total respondents, 28% indicated that inventory management had been able to assist to maintain product availability to a large extent while 66% noted that it was to a little extent and 6% not at all. According to the results, although GCS has an inventory system in place, it is failing to utilise it to maintain product availability in the stores. According to Oracle (2009) an integrated inventory management system can give retailers the insight they need to understand the impact of fluctuations in supply and demand on the inventory in their supply chain. Slater (2010) also concurred that the purpose of inventory is to ensure that there is a timely supply of products so that they are available when they are needed to avoid incurring losses due to lost sales. It provides product availability which is a key dimension of customer service (Capacino, 1997)
4.3.8 To what extent has inventory management been able assist to maintain a competitive edge against competitors?

![Graph showing percentage for inventory management's ability to assist in maintaining competitive edge.]

**Figure 4.8: To what extent has inventory management been able assist to maintain a competitive edge against competitors?**

Figure 4.9 seeks to assess to what extent has inventory management been able assist GCS to maintain a competitive edge against competitors. 50% of the respondents agreed that it assist to a little extent, 38% agreed that it assist to a large extent while 12% indicated that it does not assist at all. This suggests that GCS has not been able to maintain a competitive edge against competitors in most of its products. By failing to manage competition, customers are likely to shift to other shops for certain products thereby this will result in the decline in the value of goods bought at GCS. Efficiency in effective inventory management will always give a competitive edge to the business regardless of its nature (Sople, 2012).
4.3.9 To what extent has inventory management been able to assist in taking advantage of economic purchase order quantity (benefits of bulk buying through discounts)?

![Pie chart showing percentages]

Figure 4.9: To what extent has inventory management been able to assist in taking advantage of economic purchase order quantity?

Figure 4.10 seeks to analyse to what extent inventory management has been able to assist in taking advantage of economic purchase order size. Of the total respondents, 38% indicated that inventory management had been able to assist to maintain product availability to a large extent while 56% noted that it was to a little extent and 6% indicated not at all. There are a number of costs such as labor and phone calls that are associated with placing huge orders as the more frequent orders are done the more the costs and the larger the order the more the organization benefits from quantity discounts (Vollmann et al., 2004). Murray (2006) also observed that bulk buying of products from a franchiser who may be the sole distributor of products results in benefits being derived by the franchisee in the form of bulk buying discounts.
4.4 PART 2: SHRINKAGE AND INVENTORY CONTROL SYSTEMS

4.4.1 To what extent does inventory shrinkage in the organisation occur?

The respondents were asked to what extent inventory shrinkage in the organisation occurs through. The findings show that through product damages, 88% said it occurs to a little extent, 6% said to a large extent while another 6% said it does not occur at all. On inventory shrinkage through theft by customers, 44% of the respondents indicated that it occurs to a little extent, 39% said it occurs to a large extent while 17% of the respondents said that it does not occur at all.

When asked the same about inventory shrinkage through theft by employees, 83% said that it occurs to a large extent, 11% to a little extent while 6% said it did not occur at all.

Figure 4.10: To what extent does inventory shrinkage in the organisation occur?

The respondents were asked to what extent inventory shrinkage in the organisation occurs through. The findings show that through product damages, 88% said it occurs to a little extent, 6% said to a large extent while another 6% said it does not occur at all. On inventory shrinkage through theft by customers, 44% of the respondents indicated that it occurs to a little extent, 39% said it occurs to a large extent while 17% of the respondents said that it does not occur at all.

When asked the same about inventory shrinkage through theft by employees, 83% said that it occurs to a large extent, 11% to a little extent while 6% said it did not occur at all.
On theft through burglary, 83% of the respondents said it did not occur at all while 11% responded that it occurs to a little extent and 6% said it occurred to a large extent.

The respondents were also asked the extent at which inventory shrinkage occurred through stock obsolescence and 72% of the respondents said that it did not occur at all, 22% said it occurred to a little extent while 6% of the respondents said that it occurred to a large extent.

When asked to what extent inventory shrinkage occurred through inaccuracies in stock counting, the results in Figure 4.11 indicate that 72% of the respondents said it occurred to a little extent whilst 22% said it occurred to a large extent and 6% believed it did not occur at all.

The statistics above show that the biggest threat of shrinkage is coming from employee theft and then followed but customer theft. The other areas such as product damages, theft through burglary, obsolescence and inaccuracies in inventory counting are not major contributors of inventory shrinkage. This is supported by Zipking (2000) who indicated that the most common type of shrinkage in retail organisations is caused either by customers or employee theft. Gorbett (2009) stated that the single biggest cause of shrinkage is employee theft.
4.4.2 To what extent are security systems used to detect inventory shrinkage in the organisation?

Figure 4.11: To what extent are security systems used to detect inventory shrinkage in the organisation?

When asked about the extent to which security systems are used to detect inventory shrinkage, 78% of the respondents who answered on the use of computerised point of sale systems said it detected to a large extent while 16% said it detected to a little extent and 6% of the remainder indicated that it did not assist in any way.

On the use of CCTVs’ all the respondents said that it did not assist at all as the organisation does not have them in place.

When asked on the extent of security guards in detecting shrinkage, most of the respondents who are 83% agreed to a large extent, 11% said to a little extent while 6% said not at all.

The results show that the organisation is utilising POS and security guards to manage the level of shrinkage at GCS. It does not make use of CCTVs which
according to Kruegle (2011) and Ace Hardware Corporation (2010) if properly configured and installed are the most effective deterrent to theft, particularly at the POS terminals and the back door.

4.4.3 Goods are properly received in and issued out of the warehouse using proper documentation by responsible officials of departments

The results in Figure 4.13 shows that 39% of the respondents strongly agree while 37% agree that goods are properly received in and issued out of the warehouse using proper documentation by the responsible officials of the department. Of the remaining respondents, 6% are neutral, 22% disagree while another 6% strongly disagree that goods are properly received in and issued out using proper documentation by the responsible. The statistics show that GCS has a system that is able to properly receive and issue stocks at the warehouse using proper documentation and is done by responsible officials of the departments. On the contrary, the statistics that disagree might indicate that these systems are not being properly utilised in the organisation. According to the Public Company
4.4.4 A reconciliation is done if there is a discrepancy between quantities received and quantities ordered.

Figure 4.13: A reconciliation is done if there is a discrepancy between quantities received and quantities ordered

Of the total number of respondents, 50% of them strongly agreed that a reconciliation is done if there are discrepancies between amount received and amount ordered while 33% agreed. A further 11% disagreed that the reconciliation is not done while 6% of the respondents were neutral and no one strongly disagreed. This statistics indicate that at GCS a reconciliation is done if there is a discrepancy between quantities received and quantities ordered. A quantity mismatch occurs when the quantities on the invoice differs from...
quantities on the purchase order. This must be resolved by recounting of the received quantities or by double checking on the quantities on the invoice (Sabri, Gupta & Beitler, 2006).

4.4.5 Senior management reviews all inventory adjustments.

![Bar chart showing percentage of responses](image)

**Figure 4.14: Senior management reviews all inventory adjustments**

When asked if senior management reviews all inventory adjustments, 55% of the respondents agreed strongly, 25% agreed, 6% were neutral, 11% disagreed while 6% strongly disagreed. These results show that senior management of GCS have been making inventory adjustments. The majority of the staff indicated that these adjustments are being done on a monthly basis. This is a long period of time that has an impact on the value of stocks considering the fact that departmental inventory counts are done on a weekly basis. Ace Hardware Corporation (2010) suggested that senior management must review all inventory and price adjustments no less frequent basis than weekly.
4.5 PART 3: INVENTORY COSTS

4.5.1 To what extent do inventory managers contribute to inventory costs in your organisation?

![Pie chart showing the extent to which inventory managers contribute to inventory costs in an organisation.]

**Figure 4.15: To what extent do inventory managers contribute to inventory costs in your organisation?**

When asked to what extent inventory managers contribute to inventory costs, most respondents constituting 78% of the total cited that inventory managers contribute to a large extent while 16% said they did to a little extent. Of the total respondents 6% said not at all. The results show that inventory managers contribute to inventory costs at GCS. According to Liyanage (2010) previous research studies found out that most of the inventory managers tend to take inventory management decisions based on intuition due to lack of the professional expertise in the field, no proper analysis of inventory data, human bias of the senior managers that is as a result of the use of rule of thumb, no user involvement in inventory management systems, inventory decisions are not integrated with strategic needs of the organizations, and ultimately as a result of no proper inventory management practices within the organization.
4.5.2 Inventory costs can be reduced by proper store & shelf replenishment processes.

![Figure 4.16: Inventory costs can be reduced by proper store and shelf replenishment processes.](image)

The results in the Figure 4.17 indicate that 61% of the respondents agree that inventory costs can be achieved through proper store and shelf replenishments while 22% strongly agree. Those who were neutral constituted 11% while 6% of the respondents did not agree that inventory costs cannot be reduced by proper store and shelf replenishment processes. According to Ray (2010) replenishment planning is also an important part of an Enterprise Resource Planning (ERP) Solution and most of the retail ERPs support vendor managed inventory and continuous replenishments which is commonly used for replenishing stock between store and distribution centre or store and supplier.
4.5.3 To what extend has the following strategies assisted in reducing inventory costs?

Figure 4.17: To what extent has the following strategies assisted in reducing inventory costs?

Figure 4.18 above seeks to analyse to what extent has the following strategies assisted in reducing inventory costs. On customer demand forecasting 72% of the respondents agreed to a large extent, 22% agreed to a little extent while 6% did not agree at all. On ordering accuracy 83% of the respondents agreed to a large extent, 17% agreed to a little extent. Lastly, on avoiding quantity discounts 72% of the respondents agreed to a large extent, 22% agreed to a little extent while 6% did not agree at all.

An accurate forecast of the future demand of a product is crucial in achieving the four "rights" of effective inventory management: that is, getting the right quantity of the right item to the right location at the right time (Schriebfeder, 2012). This results in customer demand being fulfilled as there is accurate ordering processes in place. Inaccurate inventory can cause increased operating costs, low service levels, poor customer service, and higher inventory levels (Tompkins...
& Ferrell, 2012). When the cost of storing the additional inventory is higher than the discount, the business will end up paying more (Ecommerce Business Journal, 2011).

4.5.4 Does the shop experience stock-outs of goods?

![Figure 4.18: Does the shop experience stock-outs of goods?](image)

Figure 4.19 analysed if GCS experienced stock outs of goods. The majority of respondents that is 84% indicated that they experienced stock outs while 16% indicated they were no stock outs. When the stock of an item is depleted, an order for that item must either wait until the stock is replenished or be canceled. When the demand is not met and the order is canceled, this is referred to as a stock out (Vollmann et al., 2004).
Figure 4.19: Has under stocking inventory led to a loss in sales?

The results in the Figure 4.20 indicate that 56% of the respondents agree that under stocking inventory led to a loss in sales while 27% strongly agree. Those who were neutral constituted 11% while 6% of the respondents disagreed that under stocking inventory led to a loss in sales. Carrying too little inventory is not an ideal situation as it leads to a potential loss in sales as customers are turned away and might not be reluctant to come back again in the near future for repeat sales (Oracle Retail, 2012).
Figure 4.20: Does the shop experience overstocking of goods?

Figure 4.21 analysed if GCS experienced overstocking of goods. The majority of respondents that is 78% indicated that they experienced overstocking while 22% indicated there was no overstocking of goods. The concept of overstocking is an extension of inventory carrying costs in the sense that it signifies the investment in inventory for a longer duration than necessary. Hence the opportunity for alternative investment is lost (Gopalakrishnan, 2004).
4.5.7 Has overstocking inventory led to tying up funds in non performing current assets?

Figure 4.21: Has overstocking led to tying up of funds in non performing current assets?

Figure 4.22 above seek to analyse whether overstocking led to tying up of funds in non performing current assets. About 77% of the respondents agreed, 6% was neutral while 17% did not agree at all. Literature by Prasad & Sinha, (1990) indicates that overstocking ties up capital unnecessarily that results in the loss of interest that can be earned from investment of the funds. According to Gopalakrishnan (2004) in support of the above, an opportunity for alternative investment is lost when funds are tied up in inventory.
4.5.8 Is there a feature within the inventory system that alerts the user if inventory levels are below or above critical levels?

The results in the Figure 4.23 indicate that 11% of the respondents strongly agree that there is a feature within the inventory system that alerts the user if inventory levels are below or above critical levels while 11% agree. Those who were neutral constituted 6% while 72% of the respondents disagreed. This may indicate that GCS has no proper system that informs inventory users when the inventory is below critical levels. According to Cognizant (2011) system-driven background jobs can be run to monitor inventory and raise alerts to relevant users or user groups when inventory falls below critical levels.

**Figure 4.22: Is there a feature within the inventory system that alerts the user if inventory levels are below or above critical levels?**
4.6 CHAPTER SUMMARY
This chapter discussed and analysed the results of the study. The results analysed information gathered through questionnaires addressing the key research objectives which are inventory management systems, shrinkage and inventory control and inventory costs. The next chapter will come up with the conclusion and recommendations that were adopted in the study.
CHAPTER FIVE: CONCLUSION AND RECOMMENDATIONS

5.0 INTRODUCTION
This chapter sums up the conclusions and recommendations of the study. These conclusions and recommendations are important to GCS for if adopted will change the way they have been doing business in the past. It also assessed whether the research proposition was adopted or not.

5.1 CONCLUSION

5.1.1 Establish the existence of inventory management systems at GCS.
The organisation has a perpetual inventory management control system that is computerised through a point of sale system. However, the organisation is not fully utilising this POS system to manage inventory through collaborations with suppliers.

Policies and procedures at GCS on inventory management were not being well communicated to its employees. There is inconsistence in the way stock counts are done in the organisation. Some stores were doing stock counts on a weekly basis while others on a monthly basis and this has a bearing on the overall value of stock.

GCS is not utilizing its inventory management system to gain competitive advantage against its competitors in the industry. All these shortcomings might be coming from the drawback that GCS employees are not trained in managing inventory which is a key driver of store performance.

5.1.2 Assess control systems at GCS and their impact on inventory shrinkages
The security system used at GCS is not water tight to manage shrinkage in the organisation. The organisation has clear systems on receiving and issuing inventory in the store and the warehouse but the rate of shrinkage remained high.
However this shows that there might be connivance between employees, security guards and suppliers at the point of receiving. GCS has only security guards and a computerised point of sale system to manage shrinkage. The POS system has also not been effective in managing shrinkage through customer theft. The highest percentage of shrinkage at GCS according to results emanated through employees. There is no use of CCTV which is paramount in the management of shrinkage through theft by employees and customers.

5.1.3 Assess how GCS is managing inventory costs
The organisation does not have a system that alerts critical inventory levels in the organisation. Thus at some point they experience stock outs and overstocking of products. As with overstocking, products will compete for shelf and storage space and this has a cost bearing on the operations of GCS. In overstocking, the organisation ties up its working capital in inventory that can be invested to earn an interest.
Under stocking has an impact on store rental costs that are incurred and have to be paid for despite the fact that the space has not been fully utilised. Under stocking also has a hidden cost of lost sales that affects the performance of the organisation.

5.2 TEST OF THE PROPOSITION
The researcher made the proposition that, business performance of GCS can be improved by adopting proper inventory management. GCS has not been properly managing its inventory and as a result this had an effect on business performance. Therefore, by adopting proper inventory management, the business performance will be enhanced.

5.3 RECOMMENDATIONS
The researcher recommends that:

1. Policy and procedures on inventory management systems
GCS should come up with clearly defined policies and procedures that are clearly communicated to its entire staff. The policy and procedure manual should be
circulated to all employees and regular training sessions on inventory should be conducted.

2. Daily report review
POS transactions must be reviewed daily in order to detect mistrustful behaviour such as unnecessary and excessive access to the cash drawer, refunds and product returns.

3. Training
Proper training must be conducted to employees before being assigned to a POS terminal which is a check out point. Employees should be fully briefed on their duties at these POS terminals while other staff members in the shop floor and warehouse should be trained on how to handle products so to avoid damages.

4. Ad hoc Stock counts
Stock counts should be done at stipulated intervals for example on a weekly basis. If there is need, an ad hoc cycle stock counts should be initiated to curb shrinkage through employee in the organisation.

5. Enhance store and warehouse security
The organisation should install CCTVs in all stores especially at the POS terminals, backdoors and store front ends. This will assist in reducing shrinkage that occurs through employee and customer theft.

6. Store supplier integration and demand forecasting
GCS should link its ordering with suppliers which eradicates stock outs and over stocking in a shop. If a product is about to reach its reorder level, a signal is sent to the supplier through supplier store integration facilities to replenish the goods. This minimises inventory storage costs as shelf space is very crucial in a retail supermarket.
7. JIT Inventory model
In the event that the organisation adopts supplier store integration system as in 6 above, it then becomes prudent to apply JIT inventory model as goods will be delivered just before running out thereby managing warehouse and store space.

5.4 AREAS FOR FURTHER STUDIES
Further research need to be carried out on examining how the manufacturing sector in Zimbabwe can effectively manage inventory control systems to enhance business performance.
REFERENCES


APPENDIX 1: RESEARCH SURVEY INTRODUCTORY LETTER FOR MANAGERIAL EMPLOYEES

Graduate School of Management

Mt Pleasant, Harare

Zimbabwe

Dear Respondent

The researcher is a final year student studying for a Master of Business Administration Degree with the Graduate School of Management at the University of Zimbabwe. The research seeks to study ‘An evaluation of the role of Inventory Management in enhancing business performance in FMCG Retail Supermarkets. The case of GCS (2009-2012)’. This research is in line with the partial fulfilment of the MBA requirements.

You have been selected to participate in the survey and the researcher would greatly appreciate it if you could assist by completing and returning the attached questionnaire by the 30 January 2013.

In the event that you have comments or queries in regards to the survey, do not hesitate to contact the researcher on 0772 423 883 or email to samwasu@gmail.com.

All information you provide will be totally confidential and will not be disclosed to third parties without your permission. This is purely an academic research and all the information received will be treated with utmost confidence.

Thank you in advance for your assistance in this matter.

Yours Faithfully

Sam Joe

The Researcher
**PART 1: INVENTORY MANAGEMENT SYSTEMS**

1.1 Do you have an inventory management system in place? *Please put an (x) in the appropriate box.*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>2</td>
<td>No</td>
</tr>
<tr>
<td>3</td>
<td>Not sure</td>
</tr>
</tbody>
</table>

1.2 Please specify below the inventory management control system used in your organisation. *Please put an (x) in the appropriate box.*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Perpetual inventory control system</td>
</tr>
<tr>
<td>2</td>
<td>Periodic inventory control system</td>
</tr>
<tr>
<td>3</td>
<td>Not sure</td>
</tr>
</tbody>
</table>

1.3 What inventory method do you use to value stocks in the organisation? *Please put an (x) in the appropriate box.*

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>FIFO (First In First Out)</td>
</tr>
<tr>
<td>2</td>
<td>LIFO (Last In First Out)</td>
</tr>
<tr>
<td>3</td>
<td>AVCO (Average Cost Method)</td>
</tr>
<tr>
<td>4</td>
<td>Not sure</td>
</tr>
</tbody>
</table>
1.4 How frequent are inventory counts (stock takes) done in the organisation? Please put an (x) in the appropriate box.

<table>
<thead>
<tr>
<th></th>
<th>Daily</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Weekly</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Monthly</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Yearly</td>
<td></td>
</tr>
</tbody>
</table>

Other (Specify) ……………………………………………………………………………………………………………………

1.5 The organisation has inventory policies and procedures that are clearly stated and systematically communicated? Please put an (x) in the appropriate box.

<table>
<thead>
<tr>
<th></th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
</table>

1.6 Are there training sessions done in the organisation to deal with inventory management? Please put an (x) in the appropriate box.

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Not sure</td>
<td></td>
</tr>
</tbody>
</table>
1.7 To what extent has inventory management been able to assist the organisation in the following areas? *Please put an (x) in the appropriate box.*

<table>
<thead>
<tr>
<th></th>
<th>To maintain product availability in the shop.</th>
<th>To a little extent</th>
<th>To a large extent</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To maintain a competitive edge against competitors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>To take advantage of economic purchase order quantity (Benefits of bulk buying through discounts).</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PART 2: SHRINKAGE AND CONTROL SYSTEMS**

2.1 To what extent does inventory shrinkage in the organisation occurs? *Please put an (x) in the appropriate box.*

<table>
<thead>
<tr>
<th></th>
<th>To a little extent</th>
<th>To a large extent</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Product Damages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Theft by customers</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Theft by employees</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Theft through burglary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Obsolescence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Inaccuracies in inventory counting</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
2.2 To what extent are the following security systems used to detect inventory shrinkage in the organisation? *Please put an (x) in the appropriate box.*

<table>
<thead>
<tr>
<th></th>
<th>To a little Extent</th>
<th>To a large extent</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>Computerised Point of Sale Systems</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><strong>Closed Circuit Television (CCTVs)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><strong>Security Guards</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.3 Goods are properly received in and issued out of the warehouse using proper documentation by responsible officials of departments. *Please put an (x) in the appropriate box.*

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.4 A reconciliation is done if there is a discrepancy between quantity received and quantity ordered. *Please put an (x) in the appropriate box.*

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2.6 Senior management reviews all inventory adjustments. *Please put an (x) in the appropriate box.*

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

2.7 If you agree to the statement in 3.6 above. Please specify the frequency of these inventory adjustments (for example daily, weekly, Monthly and Yearly)

...........................................................................................................................
2.8 Are there any internal control concerns related to this process that require immediate attention? If so, please describe.

1........................................................................................................................................................

2........................................................................................................................................................

3........................................................................................................................................................

PART 3: INVENTORY COSTS
3.1 To what extent do inventory managers contribute to inventory costs in your organisation? Please put an (x) in the appropriate box.

<table>
<thead>
<tr>
<th>To a little Extent</th>
<th>To a large extent</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.2 Inventory costs can be reduced by proper store & shelf replenishment processes. Please put an (x) in the appropriate box.

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.3 To what extent has the following strategies assisted in reducing inventory costs? Please put an (x) in the appropriate box.

<table>
<thead>
<tr>
<th></th>
<th>To a little Extent</th>
<th>To a large extent</th>
<th>Not at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Customer Demand Forecasting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Ordering accuracy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Avoiding Quantity Discounts</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.4 Does the shop experience stock-outs of goods? *Please put an (x) in the appropriate box.*

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.5 Has under stocking inventory led to a loss in sales? *Please put an (x) in the appropriate box.*

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.6 Does the shop experience overstocking of goods? *Please put an (x) in the appropriate box.*

<table>
<thead>
<tr>
<th></th>
<th>Yes</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.7 Has overstocking inventory led to tying up funds in non performing current assets? *Please put an (x) in the appropriate box.*

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

3.8 Is there a feature within the inventory system that alerts the user if inventory levels are below or above critical levels? *Please put an (x) in the appropriate box.*

<table>
<thead>
<tr>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>
3.9 In your opinion what recommendations can you provide your organisation to reduce inventory costs?

1........................................................................................................................................................................................................
2........................................................................................................................................................................................................
3........................................................................................................................................................................................................

THANK YOU