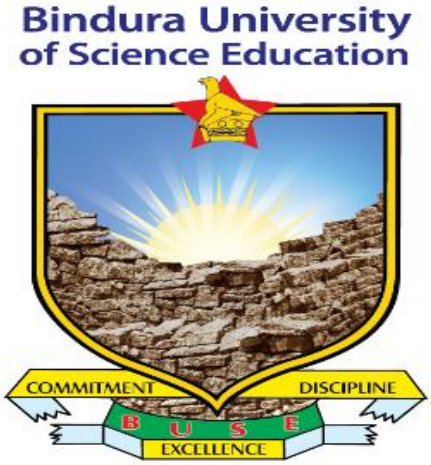

AN INVESTIGATION ON THE IMPACT OF SUPPLIER RELATIONSHIOP MANAGEMENT ON SUPPLY CHAIN PERFORMANCE OF PHARMACEUTICAL INDUSTRY. A CASE STUDY OF SELECTED PHARMACEUTICAL FIRMS IN ZIMBABWE

BY

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A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF A MASTER OF SCIENCE DEGREE IN PURCHASING AND SUPPLY CHAIN MANAGEMENT OF BINDURA UNIVERSITY OF SCIENCE EDUCATION.

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DEDICATION

To the God Almighty, i dedicate this thesis to his Glory through his undeserved kindness and strength as well as to my family for their unwavering support throughout my entire education. I also dedicate my Project work to my wife, Leah Kaputeni and my siblings for being my number one cheerleader during the writing of my dissertation. A special gratitude also goes to my parents, Mr. and Mrs. Mandivava for moral support even during hard times. A special dedication also goes to the entire family of Mandivava family. This dissertation is the fruit of their sacrifice and dedication to supporting my studies and career.

ABSTRACT

Recently, there have been reports of pharmaceutical firms facing challenges in their supply chain, a development that has been negatively affecting the lives of many in developing countries like Zimbabwe. Their performance is dwindling and this has been attributed to external pressures most of which are beyond organisational structure and strategy. A substantial part of these pressures can be managed through supplier relationship management hence the purpose of the study was to investigate the impact of supplier relationship management in on supply chain performance of pharmaceutical firms in Zimbabwe. In this study, both theory and empirical testing has revealed the influence supplier relations have on the price of products, quality, lead times and the ability to respond to untimely fluctuations in the supply market. As part of literature review, the theories used in this research study comprise the social exchange theory, Relationship Marketing theory and Systems theory. Moreover, the study employed quantitative research approach and in particular it adopted the explanatory research design. The target population for the research study was 55 officials of the selected pharmaceutical firms. Stratified random sampling technique was used to select the sample size and the sample size was reduced to 48 staff members drawn from 3 departments consisting of Purchasing, Warehousing and Logistics. Sampling units for the study entailed top, middle and lower management comprising of procurement officers, logistic staff and warehouse staff. A questionnaire was used as the main data collection instrument, with a 5 point Likert scale measuring the extent to which the agree or disagree. This was complemented by documentary review. Indeed, more research is therefore recommended on factors such supplier selection, evaluation and supplier development. Pilot study was conducted to test validity and reliability of the questionnaires. Data analysis was done and facilitated by using SPSS software. Reliability was tested using Cronbach alpha 0.7. Data was analysed using both descriptive statistics (frequencies, standard deviation, mean and percentages) and inferential statistics using multiple regression model and correlation. The study used Pearson correlation model to determine the existing relationship between the study variables. The study findings revealed that all study variables (supplier segmentation $\beta=0.270$, $p<0.05$, supplier collaboration $\beta=0.467$, $p<0.05$ and information exchange $\beta=0.247$, $p<0.05$ positively and significantly influence the supply chain performance measurement factors (cost saving, product quality, delivery performance and enhanced flexibility) in the pharmaceutical industry. The study also recommends future studies to incorporate other variables not included in the study. The study also gives room for future studies to be conducted in other Health care institutions.

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ABBREVIATIONS

SCM	:	Supply Chain Management
SCF	:	Supply Chain Finance
SRM	:	Supplier Relationship Management
SCM	:	Customer Relationship Management
LIS	:	Level of Information Sharing

CHAPTER 1

INTRODUCTION

1.0 Introduction

The research study will be centred on investigating the impact of Supplier Relationship Management on Supply Chain Performance. Therefore, this chapter will specifically highlight the background of the study, statement of the problem, research objectives, research hypothesis, significance of study, delimitations, limitations, definition of terms and finally lay out the organization of the study.

1.1 Background of the study

The pharmaceutical industry plays a critical role in global healthcare, providing life-saving medications and treatments to people around the world (Vela, 2023). Its supply chain is essential to getting medicine to the market and generating revenue from the process (Bolineni, 2016). According to Tyagi Agarwal (2014) Indian pharmaceutical companies spend one-third of their revenue on supply chain activities in order to maintain uninterrupted flow of medicines to patients. The Organization for Economic Co-operation and Development (2023) reports indicate that pharmaceutical industry has greatly contributed to the increase in life expectancy for men and women across the world. Furthermore, Burke (2020) posits that pharmaceutical advancements accounted for 73% of the total increase in life expectancy between 2000 and 2009, across 30 developing and high-income countries. Pharmaceutical innovation has not just benefited richer nations, developing countries have also been positively impacted and global inequality in life expectancy is starting to decrease.

In supply chain, performance of pharmaceutical companies as a main player has noteworthy impact on supply chain management efficiency. Identifying the risks and prevent them in pharmaceutical companies not only can lead to process optimization, productivity augment and plummeting business risk, but also will help health systems to meet goals of supply chain management which include accessibility, quality and affordability (Kapoor, Vyas and Dadarwal, 2018). The efficient and effective functioning of these supply chains has been pivotal in saving lives, mitigating the spread of the virus, and enabling healthcare systems to respond effectively to the crisis (Burke, 2020).

Pharmaceutical supply chains are essential for the national and health security and economic prosperity of the United States of America stated Woodcock (2021), the then-acting Food and Drug Administration (FDA) Commissioner.

However, behind the scenes, the intricate web of pharmaceutical supply chains presents a range of complexities that must be carefully managed to ensure the safe, efficient, and timely delivery of medicines to patients (Bhal, 2023). Extending from raw material sourcing to manufacturing, distribution, and regulatory compliance, the pharmaceutical supply chain is a highly intricate network that demands meticulous coordination and robust management strategies (Vela, 2023). Taylor (2023) further argues that, with the rapid growth of the pharmaceutical industry, supply chain management has become a critical factor in ensuring the availability and quality of medicines for patients. The pharmaceutical market has experienced significant growth over the past two decades.

According to a report by US Research and Markets, the global pharmaceutical supply chain market is expected to reach $129.6 billion by 2026, growing at a compound annual growth rate (CAGR) of 8.3% from 2019 to 2026 (Foster, Patel and Skiba, 2021). Amid this growth, supply chains have become increasingly global, complex, and opaque (Kaltenbach and Fath, 2022). However, this growth also brings along numerous challenges that need to be navigated by pharmaceutical companies to ensure the smooth functioning of their supply chains (Cretu, 202.3). The common challenges that the highly complex global pharmaceutical supply chains encounter include, inability to identify potential disruptions, inventory management, compliance, preservation of quality during transportation and distribution (Doshi, 2023).

The onset of the Covid-19 pandemic further highlighted inefficiencies and gaps that prevent efficient supply chain matriculation (Ghaffar et al, 2021). At the outbreak of the pandemic in the United Kingdom, there was concern that the fragmented nature of pharmaceutical supply chain would lead to shortages of chemicals, intermediates, drug substance, and drug product ultimately leading to disruptions in the availability of medicines to patients in need (Bhal, 2023). The Covid-19 pandemic revealed just how vulnerable the supply chain is in this country.

Like any other region, access to affordable and high quality essential health commodities is a key component of healthcare service delivery to populations most in need. Supply chain issues, however, continue to impede their availability in many African countries (Mallard, Kasonde and Seiter, 2022).

The lack of a functioning drug supply chain has been observed to be one of the major causes of poor access to essential medicines (Adebisi et al, 2022). Evidence shows that the supply chain system in Africa is largely weak and unsustainable, laden with lapses and a high incidence of counterfeit drugs, amidst poor regulation, they added. As a result, a significant number of poor and disadvantaged Africans are not getting the medicine they need (Goshorn and Usswald, 2014). Resultantly, Africa is reported to have the highest disease burden with 25% of the global disease burden, 75% of the global HIV and AIDS pandemic, 90% of the malaria cases and deaths, 9 countries among the 22 countries with the highest Tuberculosis (TB) burden in the world, significant child mortality due to diarrhoea and measles (Ngowana, 2016). Just like in global supply chains, supply disruptions, drug stock outs, compliance issues, counterfeits, high costs of both raw materials and finished products have been highlighted as key common challenges that plague the African regional pharmaceutical supply chain. Despite various scholars agreeing that Africa has certain unique issues impacting its pharmaceutical supply chain compared to global supply chains they all concur that there is need for a robust and resilient supply chain to ensure uninterrupted flow of materials.

The global and regional supply chain issues affecting the availability and affordability of critical medical products cascade down to country level. Zimbabwe like many other sub-Saharan African states has been struggling to provide a quality health service delivery system (Munharo et al, 2021). Recent epidemics have given government a chance to evaluate their preparedness to control outbreaks of diseases. However, efforts are being made to curb outbreaks of disease in Zimbabwe with a focus on improving and strengthening supply chains at province, district and health facility levels. According to a study by United Nations Development Program (2020) on the impact of UNDP-managed Global Fund investments in procurement and supply chain systems in Zimbabwe important strides have been noted in the last two decades to combat HIV, tuberculosis (TB) and malaria. New infections have dropped by more than 50% among adults and 80% in children born from HIV positive mothers over the last decade, and AIDS related deaths have decreased by 60%. TB incidence declined by 67% between 2011 and 2019. Malaria incidence fell by 24% between 2015 and 2019.

Despite notable progress, significant challenges remain. Zimbabwe has, in the recent past, been affected by cholera, typhoid and other disease outbreaks. The USAID Global Health Supply Chain Program-Procurement and Supply Management (GHSC-PSM) project of 2022 has shown commitment in supporting USAID in Zimbabwe to strengthen supply chain

performance and improve the availability of health commodities. The Ministry of Health and Child Care (MoHCC) in partnership with the World Health Organisation (WHO) are working together to strengthen supply chain and logistics management systems within the MoHCC during disease outbreaks (WHO, 2019).

Manufacturers and distributors need to supplement efforts by the government and international agencies in order to create not just a more patient centric pharmaceutical supply chain but one that is reliable, responsive, and agile. In the complex and demanding field of healthcare, the significance of supplier relationship management cannot be overstated. Beyond transactional exchanges, supplier relationship management fosters collaboration among supply chain partners, enhances efficiency, ensures compliance, and promotes innovation. Stark et al (2022) cite greater collaboration and cooperation between pharmaceutical industry and its stakeholders as key to successfully building resilient and sustainable supply chains for the future and delivering the outcomes sought by patients and by all parties in the ecosystem that serve them.

Furthermore, Kumar (2023) advocates that through prioritizing strong relationships with suppliers, healthcare organisations can build resilient supply chains that not only meet their immediate needs but also contribute to the long-term well-being of patients. The profitability and efficiency imperatives that increasingly surface in the pharmaceutical industry also intensify the need to have efficient and effective material and information flow. A research study is therefore needed to examine the impact of supplier relationship management and some of the factors to be considered in enhancing the performance of pharmaceutical supply chain.

1.2 PROBLEM STATEMENT

According to the World Bank, supply chain performance has declined at an alarming rate resulting to a decrease in global gross domestic product (GDP) up to 4.7% (WB, 2013). The situation has been exacerbated by vicissitudes in pharmaceutical supply chains, which have become increasingly complex in recent decades, making them more and more susceptible to disruption. Resultantly, poor availability and low affordability of essential medicines are current significant global health concerns, especially in low and middle-income countries like Zimbabwe (Mutyavaviri, 2021). If the trend continues it would affect the governments' ability to combat various disease outbreaks and resultantly incur detrimental effects of untimely death of patients. The emergence of the Covid-19 pandemic and international trade

tensions mean that pharmaceutical companies and their stakeholders must take action to ensure robust and reliable supply chains. A research conducted by Mageto et al (2012) reveals that there is a drastic increase in the pressure on organizations to find new ways to create and deliver value to customers to improve on their supply chain performance.

There have been very few well designed studies that demonstrate what works to improve supply chain performance within health systems. Supply chains are complex, context specific, diverse and dynamic. Given the context specific nature of supply chains and their dependence of multiple external factors, it is difficult to rely on studies from other contexts because their external validity is quite limited (Yadav, 2015). Supply chain performance is influenced by contingent factors that lie beyond the realm of strategy and structure. Nevertheless, the benefits of supplier engagement are well documented yet there are inadequate practices by both manufacturers and distributors to strategically include supplier relationship management as main approach to pharmaceutical supply chain performance improvement. It is against this background that the researcher expounds on the impact of supplier relationship management on pharmaceutical supply chain performance.

1.3 Aim of the Study

The study seeks to explore the impact of vendor relationship management on pharmaceutical supply chain performance.

1.4 Objectives of the study

The main objective of the study was to ascertain the link supplier relationship management has on supply chain performance in the pharmaceutical industry.

The research sought to achieve the following specific objectives:

i. To establish the effect of supplier relationship management on pharmaceutical cost performance.
ii. To determine the influence of supplier relationship management on quality performance.
iii. To explore the effect of supplier relationship management on delivery performance.
iv. To elaborate the impact of supplier relationship management on supply chain flexibility.

1.5 Research hypothesis

H1: Supplier relationship management leads to cost performance of pharmaceutical supply chains in Zimbabwe.

H2: Supplier relationship management leads to quality performance of pharmaceutical supply chains in Zimbabwe.

H3: Supplier relationship management leads to delivery performance of pharmaceutical supply chains in Zimbabwe.

H4: Supplier relationship management leads to improved flexibility of pharmaceutical supply chains in Zimbabwe

1.6 Significance of the study

The research will be of immense importance to the following categories:

1.6.1 To the researcher

The research is expected to train the researcher with the realistic research expertise and to enable the researcher to attain a Master's of Science Degree in Purchasing and Supply. The researcher will also attain the know-how of carrying out research studies and it will help him become a referee to other researchers. The study identifies gaps found when managing suppliers in the pharmaceutical industry and proffer solutions to enhance supply chain performance. Additionally, the researcher broadens his understanding of the relationship between supplier relationship management and supply chain performance in the medicine supply industry. It would also enable the researcher to gain research skills and experience to conduct research in the future and to combine academic theories with practical procedures.

1.6.2 To other researchers:

The academicians and researchers will use the study to explore more on buyer supplier relationships and further the study on the effect of such relationships on both organizational and supply chain performance, and bring more ideas in future. Academicians will have to expand this research to a more exhaustive one and come out with more positive ways to improve performance of supply chains especially in pharmaceutical sector. Future researchers

will have a reference point based on the information obtained, which will help them comprehend the factors and contribute to future studies.

1.6.3 To the pharmaceutical industry

This study has practical implications for procurement practitioners and other business operators in the pharmaceutical sector.

The study is intended to increase an understanding of the complex supplier relationships and suggested ways through which supply chain performance efficiency can be enhanced through supplier relationship management. It can, also, be a learning model for the pharmaceutical industry to understand effective supplier collaborative relationships and the benefits of supplier segmentation and continuous information flow.

1.6.4 To the Government and other stakeholders:

Through the research information, the Government and its stakeholders will be able to visualize the complexities in the supply chains of the medicine supply industry. The findings can be used for better future pharmaceutical production as well as procurement planning. More so, the findings of the study will be of importance to policy makers and regulators by establishing the relationship between supplier relationship management and supply chain performance efficiency hence the findings of the study will be a key ingredient in the planning, designing and implementation of a sound medicine supply chain network that will fit to the overall economic strategy.

1.7 Assumptions

It is assumed that:

i. Respondents will be honest on their responses.

ii. The respondents understand the concept of vendor relationship management as an important dimension of supply chain management.

iii. There would be maximum cooperation from the respondents.

iv. Respondents would be allowed unlimited access to valuable information.

1.8 Delimitation of the study

The study focuses on supplier relationship management and supply chain performance, specifically on supplier segmentation, supplier collaboration and information exchange. Also, the current study was based on pharmaceuticals production and distribution in Harare and excludes other parts of the country.

1.9 Limitation of the study

The scope of this study is limited by the circumstances in which it is carried out. The study is being conducted on a part-time basis. Normal work duties and the research demands are competing for the limited available time. This exerts a lot of pressure on the researcher and may have some bearing on the quality of the study.

1.10 Definition of terms

The following are the definitions of key terms to be used in this research study:

1.10.1 Supplier Relationship Management (SRM)

Supplier relationship management is a comprehensive approach to managing an enterprise's interactions with the organisations that supply the goods and services it uses (Mentzer, DeWitt, Keebler, Min, Nix, Smith & Zacharia, 2001). It is here defined as the segmentation of suppliers, supplier collaboration and management of information sharing practices.

1.10.2 Supplier Segmentation

Supplier segmentation is the strategic process of categorizing suppliers based on specific criteria, such as, spend, supplier risk, or strategic value to the organization. It helps businesses allocate their resources more effectively and manage different types of suppliers with an appropriate level of care, depending on their importance to core operations.

1.10.3 Supplier Collaboration

Supplier collaboration is a business model where companies work together with their suppliers to create a more efficient and effective supply chain.

1.10.4 Information Sharing

Supplier information sharing (SIS) is a key aspect of supplier relationship management (SRM), which aims to optimize the performance and value of the supply chain. Information exchange can enhance collaboration, innovation, risk management, and operational efficiency between buyers and suppliers.

1.10.5 Supply Chain Performance

According to Hohenstein, Feisel and Hartmann (2014) supply chain performance (SCP) refers to an extension of supply chain activities that enables an organization to meet the end users' requirements such as availing the products and on time delivery of products. Indicators of supply chain performance in this study are efficiency (cost saving) and effectiveness product quality improvement and improved delivery system) and flexibility.

1.11 Organization of the study

This section provides an outline on how the research study is going to unfold:

Chapter 1: This chapter is the preamble to this study and serves as a guide. It provides background information, statement of the problem, objectives of the study, and research questions. It also gives the assumptions, significance of the study, delimitations of the study, limitations, definitions of terms, and finally chapter summary.

Chapter 2: Literature review: This chapter reviews literature on supplier relationship management by analysing the impact of supplier relationship management on supply chain performance. Such analysis reviews gap from previous researches on efficiency, effectiveness and flexibility of supply chains and thus gives direction to this research.

Chapter 3: Research Methodology: The purpose of this chapter is to discuss the research methodology used in this research study to collect data concerning this study. It covers aspects such as research design, sampling procedures, research instruments, data analysis and presentation procedures.

Chapter 4: Data presentation, analysis and discussion: This chapter presents data in the form of tables for information gathered through questionnaires. This researcher will discuss the information immediately below the tables. Qualitative data from interviews will be reported in narrative episode.

Chapter 5: Summary, conclusions, and recommendations: This chapter concludes the research work.

1.12 Summary

The chapter looked at the background to the study, statement of the problem, research objectives, research questions, assumption of the research, significance of the study and definition of terms, delimitation and limitation of study were also discussed. The following chapter focuses on literature review on supplier relationship management aspects and performance enhancement of pharmaceutical supply chains.

CHAPTER II

LITERATURE REVIEW

2.0 Introduction

The purpose of this section is to provide a critical evaluation of the available research evidence about Supplier Relationship Management and how it influences Supply Chain Performance in the pharmaceutical industry in Zimbabwe. It covers various studies conducted by other researchers on supplier relationship management and supply chain performance. Among the areas to be reviewed include such supplier relationship management aspects as supplier segmentation, supplier collaboration and uninterrupted information flow as well as the extent to which those aspects influence performance of pharmaceutical supply chains.

The chapter also covers the conceptual framework of this study. According to Saunders (2009), literature review endeavours to discuss and analyse existing literature that is relevant to the problem under study. It helps to find out what others have already researched and reported on (Saunders, 2012). Using concepts insights and empirical evidence the researcher will be able to identify gaps and weakness in prior studies so as to justify a new investigation.

2.1 Theoretical framework

2.1.1 The Social Exchange Theory

Supplier relationship management is guided by Social Exchange Theory opined by Homans (1958). The theory is a concept that focuses on the study of social behaviour in the interaction of two parties that implement a cost benefit analysis to determine risks and benefits (Cropanzano et al., 2017). The Social Exchange Theory starts with the premise that humans interact in social behaviour in order to maximise benefits and minimise costs, which then leads to a positive outcome (Hutchison & Charlesworth, 2003). Ekeh, (1974) suggests that connections among people are encouraged through money saving advantage investigation and assessment of other existing options. One of the conclusions of Social Exchange Theory is that social interactions are moulded through the use of the cost benefit analysis. Parties will only remain in the relationship as long as they are accruing benefits from it (Crapaznano et al., 2017).

The Social Exchange Theory is applicable for supply chain management and can be a valuable instrument when analysing buyer supplier relationships. The Social Exchange Theory is specifically applicable for the selection of supplier strategies and for making decisions about how to deal with suppliers. The Social Exchange Theory, therefore, becomes a critical element in the development and selection of supplier relationship management strategies (Kingshott, 2006).

Suppliers in an association can have various qualities and include various dangers. It is along these lines important to separate providers into gatherings and to create comparative procurement procedures dependent on this portrayal (Gelderman and Weele, 2005). Supplier grouping practice is one of supplier relationship management's most important sub protection measures and is called supplier segmentation. Supplier segmentation can be defined as a process in which suppliers are divided into different groups with diverse behaviour that require different types of inter-organisational relational structures to achieve stock exchange value (Day, Magnan and al. 2010). Additionally, supplier segmentation is a relatively mature topic and criticism comes from the information literature that describes developments in this area (Rezaei and Ortt, 2012). Albeit the theme is full grown, the strategies for provider division are as yet dependent upon a few reactions, which are generally connected to the nonexistence of normalisation in the choice of factors for the gathering's providers or the absence of thought of social interdependencies (Gelderman and Weele, 2005, Rezaei and Ortt, 2012).

2.1.2 Relationship Marketing Theory

.The focus is on long term inter-firm relationships and added value. According to Sheth & Parvatiyar (1995), the emergence of the relationship marketing perspective has been marked by a paradigm shift in relationships, because it is not only interested in the classical parameters of economic exchange, but also takes into account non-economic characteristics, especially trust and commitment. Additionally, Morgan and Hunt (1994) made a distinction between economic and social exchange on the basis of exchange theory and concluded that the basic guarantee of social exchange was the spirit of the contract of trust and commitment. Veloutsu, Saren & Tzokas (2002) study relationship promoting as a way of thinking to realign purchasers and providers through a business system that unites them in a helpful and agreeable manner and guarantees synergistic, dependable and commonly advantageous connections.

Relationship promoting hypothesis is especially relevant to purchaser provider settings, as it centres on "close long haul intuitive associations with, specifically, providers of rivalry, struggle and discretionary autonomy to common collaboration and shared reliance (Stavros, Pope, & Winzar, 2008).

Collaboration with suppliers and customers is an important pillar on the road to building a supply chain excellence delivery strategy (Slone, 2004). Coordinated effort with providers implies working with leaders at the supplier level to distinguish enhancements that can be quantifiable and positive for the two organisations. An illustration of cooperating with merchants may be updating an item that is a custom maker ally for your association. Fernandes, & Pacheco (2010) says that preparing a business world with rapidly changing markets and customer needs, strategically rethinking manufacturing and supply chain strategies has become the standard practice for businesses to succeed. The margins of manufacturers and suppliers are reduced, as the traditional opponent of the manufacturer receives only the best price from suppliers (Shalle, Guyo & Amuhaya, 2014). This methodology makes momentary offices and does not actually improve the serious situation of one or the other party. High ware unpredictability keeps on prompting a freeze in market interest and expands tension on makers and providers. Without a mutual benefit maker provider proportion, costs and creation stay troublesome (Agango, & Achuora, 2018).

2.1.3 Systems Theory

Systems theory is a conceptual framework based on the principle that the component parts of a system can best be understood in the context of the relationships with each other and with other systems, rather than in isolation (Wilkinson, 2011).Systems theory brings together several components of a complex supply chain (that is, human beings, capital, information, materials and financial resources, and so on.) to form a subsystem that is therefore part of a larger supply chain or network system. The theory argues that for a holistic theory of frameworks it ought to be utilised to comprehend the inner and outside factors that shape an association's presentation. The business climate is getting dubious, purchaser and frameworks are more firmly associated than any time in recent memory, working as a solitary unit with sub conductors. This is more predictable with relationship showcasing as inseparable from an organization viewpoint on provider-based connections (Gummesson, 2000).

The information elements encompass overlying communication and infrastructures relating to decision making. According to Enterprise Research Centre (LERC) information flow in a contemporary supply chain is a key ingredient of supply chain management (Lambert et al., 1998). Sigh and Mitchell, (1996) demonstrated the importance of information flow in the supply chain that is best managed in three tiers that is in the pre-transactional element, transactional element and post transaction element of the procurement process. Information exchange is fundamental since it empowers coordination of different supply chain measures. Material stream on a supply chain is fixed on precise data exchange among supply chain participants and as such firms can react to showcase elements suitably as long as the correct data is shared. Supply chain setup impacts the measure of information that can be partaken in a supply chain. Information sharing empowers streamlining of supply chains and improved firm execution. Bowersox, (2000) allude that for purposes of having an optimum supply chain performance, information on demand forecasts and promotional information should be shared across the supply chain.

2.2 Supply Chain Performance

According to Hohenstein, Feisel and Hartmann (2014) supply chain performance refers to an extension of supply chain activities that enables an organization to meet the end users requirements such as availing the products and on time delivery of products. Supply chain performance is an important and multi-faced issue in supply chain management. Performance measurement is defined as the information regarding the processes and products results that allow the evaluation and the comparison in relation to goals, patterns, past results and with other processes and products (Petrovic-Lazarevic and Sohal, 2002). Performance measurement is essential as it generates improvement prospects based on the feedback obtained through various key performance measures and metrics (Neely et al., 1995).

The objectives of performance measurement are to improve the efficiency and effectiveness of a supply chain (Beamon, 1999; Gunasekaran et al., 2001), and also consider the overall supply chain goals and the metrics to be applied (Gunasekaran et al., 2001). In order to achieve an efficient and effective supply chain, many organisations have realised the importance of performance evaluation and what measures should be used. Indicators of supply chain performance in this study are cost optimisation, quality improvements, delivery performance and flexibility.

2.2.1 Cost optimisation performance

According to Chopra et al., (2016) supply chain costs are defined as costs that constitute the total sales price of a product or service. Manufacturers usually define supply chain costs using the total cost of ownership. Therefore, supply chain cost optimisation refers to efforts the supply chain managers make to reduce costs of the different operations and logistics while maintaining the optimal and robust organisational performance and consumer services. Considering that poor availability and low affordability of essential medicines have been noted to be current significant global health concerns, especially in low and middle-income countries (Mutyavaviri, 2021) cost saving has emerged as the most important pharmaceutical supply chain performance metric.

The pharmaceutical industry is faced with a daunting but inevitable task of monitoring and optimising costs otherwise consumers face higher out-of-pocket expenses. Cost reductions can be passed onto consumers as decreased prices and this, together with increased speed to market, increases the organization's profitability and strategic competitive position (Zyl, 2003). More over, exploring cost reduction opportunities can increase profitability and sustainability giving organisations a greater competitive edged (Jenkins, 2022).

Above all, supply chain savings are a crucial part of any business including pharmaceuticals. By increasing efficiency and reducing costs across the entire supply chain, organisations can improve their bottom line while also improving customer service.

2.2.2 Improved quality performance

Quality is one of the most important metrics in supply chain management (Christopher & Towill, 2000). There are several definitions of quality originating from different perspectives, but the most consistently used definition that has received a widespread acceptance and application, is that quality is the ability of a product to meet or exceed customer expectations (Juran et al., 2001). However, Kotler and Armstrong, (2013) cited that the major challenge with this definition is that customer (buyer) expectations vary a lot, bringing in the much-dreaded element of subjectivity. Quality has become one of the most important dimensions when measuring supply chain performance.

Noteworthy, no time in history has seen such a spike in the value placed on quality as it does now (Emond and Taylor, 2018). This is after realising that providing high-quality goods at the right time, place, and price is essential for pharmaceutical firms to overcome difficulties

(Golly, 2017). Furthermore, pharmaceutical product quality has been repeatedly stressed by regulatory agencies (Sangshetti et al., 2017). When it comes to people's health and economic well-being, the pharmaceutical industry must remain competitive (Mehralian et al., 2015). Above all, a company's principal objective is to satisfy its customers, and this is no different in the pharmaceutical sector.

2.2.3 Delivery performance

Kotler & Keller (2016) postulated that delivery performance is a merged evaluation of all the aspects related to the movement of materials from the suppliers to the buyers such as reliability, speed, accuracy timeliness, and precision (Forslund et al., 2008). The delivery performance key performance indicators are more concerned with operational factors like stock-outs, lead time, fulfilment rates, on time delivery and so on. Within the hierarchy of supply chain performance metrics delivery performance, as characterised by the timeliness and dependability of product delivery to the final customer in the supply chain, is acknowledged as a key metric for supporting supply chain operations (Cirtita and Glaser-Segura, 2012). Additionally, delivery performance is classified as a strategic level performance measure by Gunasekaran et al. (2004) and is also a major component of the Supply Chain Operations Reference (SCOR) model (Huan et al., 2004).

2.2.4 Flexibility performance

Supply chain flexibility is an organisation’s capacity to adjust and respond efficiently to fluctuations in demand, market conditions, disruptions, and opportunities (Garber, 2023). Currently, changes in the environment (socio-political, changing demand and so on) are the causes for increasing uncertainty in the market place. In order to deal with this, flexibility in the supply chain has become more and more important as organisations look to find effective ways to manage their costs and resources with consumer demand as the key focus. This has made flexibility one of the key supply chain performance metrics in the pharmaceutical industry.

According to Sl-Hawary, Mohammad, and Alsarahni (2017) customers and managers of drugstores are strongly concerned with supply chain flexibility, even a large part of their satisfaction relates to this aspect, and a hard work should be done to improve the supply network flexibility of pharmaceutical companies due to its significant impact on customer satisfaction. Furthermore, having a flexible supply chain can help streamline your processes,

reduce lead times for procurement, production, and distribution. This efficiency not only enables a faster response to demand changes, but also enhances your organisation's ability to introduce new products and stay ahead of the competition

2.3 Supplier relationship management

Supplier relationship management (SRM) is a management approach that manages all interactions between an organisation and its suppliers (Kroenke, 2012). The primary goal of supplier relationship management is to improve the efficiency and effectiveness of inter-organisational processes, with the delivery of superior value to consumers taking precedence. According to supply chain experts, SRM is a comprehensive design of defining what they demand from a supplier and managing the connectivity between the organisations to reach the required necessities (Matunga et al., 2021).

Supplier Relationship Management bridges the gap between the organisation and the final consumer. Numerous organisations face difficulties within their network chains, resulting in a loss of business. It is recommended that such entities implement Supplier relationship management practices to ramp up their supply chain efficiency (Matunga et al., 2021). According to Hughes et al. (2016), inefficiency and ineffectiveness in the supply chain system are the leading causes of deficiency in achieving its set goals. He also claims that firms with an interconnected supply chain network process made more financial gains than others who paid less consideration to the supply chain process. Also, Zsidisin and Ellram (2001) averred that collaborations with selective suppliers result in mutual benefits such as lower overall costs, increased customer satisfaction, in time delivery and flexibility in dealing with changes, increased productivity, and long-term competitive advantages in both supply and consumer market places.

Supplier Relationship Management includes practices such as supplier segmentation, supplier information sharing, duration of relationship, supplier selection, evaluation, collaboration, development, supplier management (Mwangi and Muli, 2020). In this study the core aspects of supplier relationship management include supplier segmentation, supplier collaboration and information sharing. These Supplier Relationship Management strategies would be part of the organization's overall corporate strategies.

2.3.1 Supplier segmentation

Supplier segmentation is the process of allocating suppliers into distinct groups so that limited resources can be allocated to manage them effectively (Porteous, 2022). Stratifying the supplier base of an organization permits the formation of collaborative partnerships through the segmentation of the supplier base into smaller categories which are more manageable. This fits directly into the notion of strategic supplier alliances, in which the buyer will be able to recognize the suppliers which the organisation targets to partner with, those suppliers that the organization must do business partnership with, and the suppliers that the firm could do without (Thomas, 2012).

Vendor segmentation as a marketing tool when adopted is suitable for managing supplier sustainability. Stratification as a process involves categorising all suppliers on the basis of a distinct set of criteria in order to gain a clear understanding of a buyer's supply base and its essential aspects, and making adjustments in the resource allocations in reaction to the findings (Young, 2012). It involves getting a comprehensible and full picture of all the suppliers in order to enable the organisation to split them into meaningful groups after which the organisation is able to focus their scarce engagement resources on the appropriate group (Tania, 2011).

Supplier segmentation helps a firm to identify and handle suppliers in an orderly manner. It can be a valuable means to selecting suppliers and to choosing whether or not to advance in cultivating a sustained partnership with them, based on the considerable importance of the commodity supplied (Vance, 2013). Supplier stratification enables firms to develop a structure which is backed up by diverse strategies that can be undertaken to handle diverse suppliers correctly. Martinson (2005) notes that, in order to develop or improve supplier relationship management, an organization needs to implement a supplier segmentation approach that considers the internal needs of the business, spend, and also accounts for all risk and business critical factors.

2.3.2 Supplier collaboration

According to Clarke (2023), Supplier Collaboration is a strategic approach to supplier management that involves aligning suppliers and partners around your business strategy to deliver on key goals and drive mutual value in collaboration. Such collaboration can simply be defined as two or more chain members working together to create a competitive advantage

through sharing information, making joint decisions, and sharing benefits which result from greater profitability of satisfying end customer needs than acting alone (Simatupang & Sridharan, 2017). In supplier collaboration, business transaction is a relational exchange as the roles of supplier and the organisation are no longer defined in terms of the simple transfer of ownership of goods and services.

By focusing on relational exchange, supplier collaboration entails the activities that are undertaken jointly rather than unilaterally (Zineldin, 2018).

According to (Mattessich & Monesy, 2016) the requirements for effective collaboration include mutual objectives, integrated policies, joint decision making, information sharing, sharing of benefits and losses. More so, there also is another thing called partnership influence, where the organization gets multiple suppliers to work together to improve the performance of critical components or subsystems (Kamau, 2016). Organisations sometimes undermine their own chances of a partnership by being overly cautious about sharing information. A core requirement for successful collaboration is trust and willingness, on the part of both buyer and supplier, to share information. Additionally, strategic suppliers are strategic for a reason; they have their own market power and may be sceptical about what is in it for them. This means that many suppliers cannot be forced into a collaborative partnership; they must be persuaded (Sarkar, 2017). Trusted supplier relationships create a robust risk management framework.

2.3.3 Supplier Information Sharing

Information sharing refers to the extent to which critical and proprietary information is communicated to an organisation's supply chain partner (Monczka, Petersen, Handfield & Ragatz, 1998). According to Khan and Siddiqui, (2018) information sharing is also referred to as the degree of access to and the sharing of important supply chain information between an organisation and its supply chain partners. This information may include forecasts; manufacturing schedules, as reflected in inventory drawdown rates; and inventory data at upstream locations (Chengalur-Smith, Duchessi & Gil-Garcia, 2012). As a society moves from the industrial to the information age, information is brought to the forefront as a factor of production and identified as the asset fundamentally responsible for the organisational success (Grant, 1996).

Sharing information allows the participating organisations to integrate their knowledge, detect the window of opportunities in the marketplace and capture positions of advantage (Sambamurthy, Bharadwaj & Grover, 2003). In particular, sharing of information between trading partners may enable the firms to plan activities in the supply chain, such as conjunctive demand forecasts and replenishments. Nevertheless, the great potential benefits of information sharing do not lead most firms, especially small and medium enterprises (SMEs), to enter such cooperative relationships (Ke & Wei, 2007).

Lack of information sharing with trading partners has been consistently found to be the most critical failure factor in supply chain management (Elmuti, 2002). Information sharing is a vital aspect of coordination amongst parties in a supply chain.

2.4 Performance metrics and supplier relationship maagement

The main performance metrics in the supply chain management literature include cost performance, quality performance, and delivery performance and flexibility and there are realistic grounds to suggest that these metrics can be impacted by inter-organisational relationships between supply chain partners (buyers and suppliers).

2.4.1 Improved Cost Saving Performance through Supplier Relationship Management

According to Chopra et al., (2016) cost is linked to the price charged. Modern day business analytics practice advocate for Total Cost of Ownership. It is defined as the sum of purchase price plus costs incurred prior to and post product delivery (Wisner et al., 2016). Matunga et al. (2021) recommends organizations to implement supplier relationship management practices to ramp up their supply chain efficiency. The trust and commitment, motivates suppliers to share their manufacturing, engineering, transport expertise with the buying organization. By gaining access to this intellectual capital, the firm will be able to design better products and implement leaner and more efficient manufacturing processes. Supplier expertise on transport economics can also be employed by the firm to cut distribution costs and get to market quicker (Roushdy, 2015).

Supplier relationship management further reduces chances of supply disruptions and exposure to risk, cost cuts in transactions as well as attainment of performance outcomes (Um and kin, 2018). Moreover, segmenting suppliers include such benefits as reduced costs and process improvements, thus improving supply chain efficiency (Giguere and Goldbach,

2012). On the other hand, information sharing can increase supply chain efficiency by reducing inventories and smoothing production (Maskey, Fei and Nguyen, 2021). Empirically various authors have reviewed the contribution of supplier management practices on saving costs.

Roushdy, Mohamed, Hesham, Elzarka and Hafez (2015) conducted a research study with the purpose of examining the effects of Supplier Relationship Management on Supply Chain Performance in generally and particularly on the manufacturing companies in Egypt. Their study targeted companies belonging to four main business sectors, fast moving consumer goods (FMCG), pharmaceutical, steel, and fertilizers, to provide a comprehensive and yet a multi-faceted view of the topic being investigated. The study highlighted that, for most companies, establishing strong, mutually beneficial long term relationships, strategic supplier relationship management is a critical step in improving performance across the supply chain, generating greater cost efficiency and enabling the business to grow and develop. The research further revealed other benefits associated with supplier relationship management as cost, risk and lead time reduction, quality improvement as well as innovation.

Additionally, Tangus (2015) reviewed the Effect of Supplier Relationship Management practices on performance on manufacturing companies in Kisumu County, Kenya. Her study found out that trust is a critical factor in fostering commitment among supply chain partners. She further discovered that the presence of trust improves measurably the chances of successful supply chain performance. A lack of trust among supply chain partners often results in inefficient and ineffective performance as the transaction costs (verification, inspections and certifications of their trading partners) mount, she added.

Furthermore, Munyimi and Chari (2018) in their study based on the telecommunication sector in Zimbabwe, agreed with Kumar and Rahman (2016) on the fact that Supplier Relationship Management enabled organizations to reduce inventory levels by introducing systems such as JIT (just in time) and reduced time to the market. This resulted in organizations in the private telecommunication sector achieving huge cost savings.

H1: Supplier Relationship Management leads to improved cost saving performance.

2.6 Improved quality performance through supplier relationship management

McGinnis and Vallopra (2000) have demonstrated that involving suppliers in the value creation procedure of a purchasing firm can be a beneficial alternative, however one that is

hard to accomplish by application. They argued that purchasing and supplier involvement can contribute to process development or improvement, especially in manufacturing industries.

According to Du Plessis et al. (2001), co-maker ship is based on the concept that a traditional organization's supplier contact is characterized by interaction over quality, price and delivery. Fan et al. (2013) added that organisations have received many advantages and values from supplier relationship management including lower costs, higher quality, better forecasting and win-win relationships with suppliers. Shahzad and Sillanpaa (2015) weighed in with the fact that supplier relationship management enabled organizations to identify supplier's developmental needs which they would provide assistance to the supplier. The resultant effect would be an improved delivery of quality goods and services by the supplier which would ultimately contribute positively to the organizational performance. The improved quality delivery by the supplier would also contribute towards the organization's cost reduction. Zenir, Findikli and Celtekligil (2018) further weighed in by stating that not only did the supplier relationship management through strategic partnership significantly reduced cost but also improved time, new products were introduced to the market, increased productivity and enhanced product quality.

There is ample empirical evidence in support of the idea that contract farming is the antecedent to the attainment of quality produce. For instance, Awan, Kraslawski and Huiskonen (2018), in their study on the effect of supplier relationship management on organisational performance, based on 239 companies in Pakistan concluded that SRM enabled the buyer and the supplier to appreciate each other's cultural values. They concur with Roushdy et al. (2015) as they added that, through supplier relationship management organizations and their suppliers have come to realise that their organizations can be much more profitable if they adopt a closer co-operation and implement comprehensive communication in areas such as new product development, quality, engineering, and logistic.

Roushdy, et al (2015) further supported in their study, examining the effects of Supplier Relationship Manangement on Supply Chain Performance in generally and particularly on the manufacturing companies in Egypt. Their study targeted companies belonging to four main business sectors including the pharmaceutical industry. The research revealed benefits associated with supplier relationship management as cost, risk and lead time reduction, quality improvement as well as innovation.

Furthermore, Denhere and Choga (2022) studied the effect of supplier relationship management on organizational performance for firms in the plastic manufacturing industry in Harare. The study findings revealed that organizations in the plastic industry enjoyed several supplier relationship management benefits that included information sharing and involvement of suppliers in new product development as these contributed positively to their overall organizational performance. Their study confirms that product quality is better enhanced when suppliers are involved in new product development.

H2: Supplier relationship management leads to improved product quality performance.

2.7 Improving delivery performance through supplier relationship management

According to Stewart (1995), an increase in delivery performance is possible through a reduction in lead-time attributes. Another important aspect of delivery performance is on-time delivery. With a high level of communication, companies can improve on time delivery rates to customers and adapt to rapidly changing demand without adding to inventory costs. Moreover, supplier collaboration aligns supply and demand across tiers (Bryman, 2017).

Research suggests that suppliers who are able to respond quickly to changes in order volumes through strategies such as vendor managed inventory, just-in-time delivery, and inventory positioning within the supply chain can significantly improve customer satisfaction (Handfield & Bechtel, 2002). Earlier research by Clark (2006) empirically supports that, in the engineering phase of a product development, extreme supplier involvement creates advantages in terms of lead times, costs and quality (McGinnis and Vallopra, 2000).

Roushdy, (2015) on reviewing the effects of supplier relationship management on supply chain performance emphasized that, for effective planning and delivery of any task to be achieved, the skills and knowledge of suppliers should be integrated.

Praveen and Suraj (2021) explored the coordination between Buyer and Supplier in the supply chain of pharmaceuticals. They highlighted that many businesses depend on partnerships with partners that are tightly cooperative. Their research illustrated it as a requirement in the pharmaceutical supply chain that suppliers and buyers operating the supply chain in changing economies should coordinate to achieve such inter-organisational objectives as delivery, quality and flexibility.

H3: Supplier relationship management practices lead to improved product delivery performance.

2.7 Enhancing flexibility through supplier relationship management

Supply chain flexibility refers to the organization's ability to respond to supply chain disruptions, changes in demand and external market variations (Gatner, 2020). It hinges on adaptable inventory management, agile production capacities and dynamic supplier networks. According to Baraka (2023) close collaboration and effective communication with suppliers help identify potential risks, such as disruptions in the supply chain, and develop contingency plans to mitigate their impact. Supplier Collaboration also reduces supply chain variability by sharing demand and supply forecast with customers and suppliers across multiple tiers he added. It allows buyers to share production plans, forecasts, and commitments, allowing suppliers to be more responsive when meeting demand requirements from thousands of miles away. Hafez et al (2015) further cited two of the greatest benefits of supplier relationship management as co-maker ship and the development of more responsive and competitive supply chains.

Furthermore, information sharing with business partners enables organizations making better decisions and making action on the basis of greater visibility (Tathee, 2007). Similarly, Enz and Lambert (2012) posit that collaborative relationships with key suppliers can co-create value and its proper implementation has helped organisations gain access to valuable resources and supplies, reduce costs, enhance their flexibilities, ensure quality, implement technology successfully, and improve overall supply chain performance. There is ample empirical evidence supporting the implementation of supplier relationship management in achieving supply chain flexibility.

Accordingly, Maskey, Fei, Nguyen (2021) conducted a study on the Role of Information Sharing on Supply Chain Performance. Their study aimed at finding out how cost, quality, delivery and flexibility as supply chain performance measures are affected by information sharing in the context of a developing country. The findings demonstrated that information sharing plays a key role in enhancing the performance of supply chains. It also showed that delivery and flexibility performance are significantly affected by information sharing while cost and quality performance are not affected by information sharing.

More so, Ojiambo, Miroga and Otinga (2021) conducted a study on the Influence of Supplier Relationship Management on Supply Chain Performance in the County assembly of Vihiga, Kenya. The study concluded that supplier relationship management significantly influence supply chain performance in the County Assembly of Vihiga. Further, the study recommends that when making supplier relationship management decisions aimed at optimizing supply chain performance, more emphasis should be placed on segmenting of suppliers on the basis of a distinct set of criteria to understand their expertise, strength and flexibility.

H3: Supplier relationship management leads to improved supply chain flexibility.

2.4 RESEARCH GAP

Most of the literature reviewed is mostly from different countries whose strategic approach and footing is different from that of Zimbabwe. Several studies have been carried out on the effect of supplier relationship management. A case in point; Munyimi and Chari (2018) examined the role of buyer-supplier relationships in achieving economic sustainability in the private telecommunication sector, Denhere and Choga (2022) studied effect of supplier relationship management on organizational performance for firms in the plastic manufacturing industry, Musodza (2009) investigated role of Buyer - supplier relationships in the Zimbabwean Tobacco Industry. Therefore, it is eminent, from the different studies done locally that supplier relationship management aspects have been concentrating on other areas like organizational performance without focusing on performance improvement of the supply chain as a whole. Moreover, none of the studies have been conducted on the home soil focusing on effects of supplier relationship management on supply chain performance for firms in pharmaceutical manufacturing and distribution industry in Zimbabwe.

This therefore prompted the researcher to carry out the study to address this yawning knowledge gap on supplier relationship management on supply chain performance of firms in the pharmaceutical industry in Zimbabwe.

2.5 Conceptual framework

According to Imenda (2014), a conceptual framework is an end result of bringing together a number of related concepts to explain a given event and also give a wider understanding of the research problem. It gives a framework of how you intend to lead the examination for your proposal; however, it goes more remote than that by additionally situating your work inside the bigger field of research (Mugenda and Mugenda, 2009). Pertaining this study,

supply chain performance is the dependent variable realised through cost performance, delivery performance, quality performance and flexibility while supplier relationship management practices like supplier segmentation, collaboration and information flow are the independent variables. These variables were discussed to widen our understanding of their possible significant effect on supply chain performance and they are shown in figure 2.1 below.

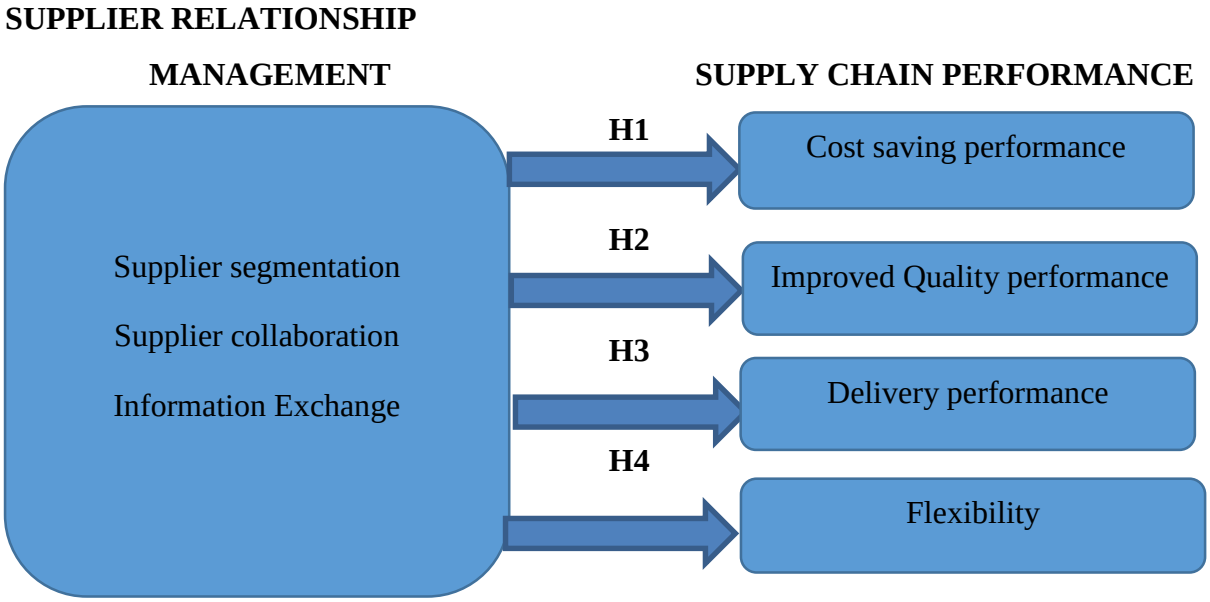

Figure 1: Conceptual framework

Source: Researcher (2023)

2.6 Chapter Summary

This chapter examined the theoretical framework that support the current study and reviewed relevant empirical literature on the impact of supplier relationship management supply chain performance of the pharmaceutical industry. The empirical literature linked what other scholars have already found in relation to supplier relationship management aspects and highlighted its research gap. The next chapter will be chapter 3 and will dwell much on the methodology of the research study.

CHAPTER III

RESEARCH METHODOLOGY

3.0 Introduction

This section of the research study focuses on the research methodology to be used. Saunders et al., (2003), postulates that research methodology is the theory of how a research study should be conducted. Research is supposed to be an explanation of the nature of the research plan, the sampling plan, the gathering and analysis of data. This includes variety of techniques and measures which will be used to gather relevant facts for the research study. This chapter gives a description of the approach in which the research study will be carried out and includes all other activities to be carried out in the research study. The research tools will be determined by the research design chosen which also will be influenced by the nature of the study.

It will also cover the research methodology to be used by the researcher and involve the research approach the research population and sample size, the sampling procedures and the research instruments that need to be used to collect the data. It will examine the validity and reliability of the research instruments. Creswell (2009) defined research methodology as the overall research plan those summaries the technique in which the research was conducted and, among other things, established the approaches to be used in it. The study intends to use both qualitative and quantitative research methodology.

3.1 Research Approach

A research approach is a strategy and technique that entails the procedures of comprehensive assumptions to detailed process of collecting data, its analysis and interpretation. Consequently, it is centred on the type of the research problem to be addressed. Research approach is basically grouped into two types namely approach of data collection and approach of data analysis or reasoning. There are three different types of approaches according to Creswell (2013), which are qualitative, quantitative and mixed methods (pragmatic). The study is going to adopt the quantitative research approach.

The researcher chose to use quantitative approach because Lewis, and Thornhill (2012), proposed that quantitative approach frequently utilizes analysis of statistical nature to establish the link between what is known and what can be learned by study. Therefore, examining data with quantitative techniques requires comprehension of the associations among variables through descriptive or inferential statistics. Descriptive statistics aided to conclude extrapolations about populations and to approximate the parameters (Yin, 2015). Neutrality is very vital in quantitative research.

Accordingly, researchers take precautions to circumvent their own presence, behaviour or attitude affecting the outcomes (e.g., by altering the circumstances being studied or affecting respondents to act contrarily). The main basis of quantitative research is deductive reasoning that move from the general to the specific. This is also referred to as a top-down approach. The validity of deductions is revealed to be dependent on one or more premises (prior statements, findings or conditions) being valid (Creswell, 2014).

3.2 Research Paradigm

A research paradigm is a method or an inquiry model of conducting research that has been proved by the research community and practiced for a long period of time. Bryman (2012) categorized variable hypothetical paradigms as positivist (post-positivist), constructivist, interpretive, transformative, emancipatory, critical, pragmatism and de-constructivist, post-positivist. On the other hand, Neuman (2011) defines a paradigm as an all-embracing perspective regarding suitable research practice, founded on ontological and epistemological supposition. According to Denzin (2011) there is an increasing number of paradigms in research, however, the common related with social studies are the positivist and interpretive paradigm. The two paradigms are characterised by contrasting world views pertaining to which reality are understood (ontology) and the construction of knowledge (epistemology). The study adopted positivism because it aimed at establishing the nexus between supplier relationship management practices and supply chain performance of firms in the pharmaceutical industry in Zimbabwe using quantitative data.

Holloway and Wheelar (2013) claimed that a positivist study uses numerical and seeks generalization by way of applying scientific approach. The current study will gather quantitative data using closed questions on a five-point Likert scale questionnaire.

Positivism viewpoint considers that social observations are related to physical phenomena, and can thus be researched in the similar fashion as pure scientific investigation, the investigation comprised an isolated entity, and the researcher was isolated from the entity.

Positivism is associated with quantitative research and it involves hypothesis testing to obtain "objective" truth (Desai and Potter, 2011). Creswell (2014) claims in the positivism philosophy, a researcher starts with a theory as an outcome of earlier outcomes or personal observations. Data gathering within the pure positivist paradigm uses quantitative method relating the illustration of practical phenomena in quantifiable, observable reductive variables. Nevertheless, while positivism has shown to be very popular with social science and management research, its purist narrative has been critiqued for yielding to obstacles in the study robustness as a result of a narrow definition of the idea of science.

Bryman and Bell (2015) reveals that while positivism supports the philosophy of objectivity towards validation and falsification, this position does not consider the point that many human judgements are created during the conducting of the research, and that researchers constitutes a part of a social perspective predisposed to subjectivism, for example in determining what to research, creating research tools and interpreting the outcomes. Together with the collection of quantitative data gathered with structured questionnaires that were administered, and comparing interpretivism and positivism, the latter one suited this research most.

3.3 Research Design

Kumar (2012) described a research design as a pattern of procedures, plan, structure and methods that can be used to attain information required for the research. In that same notion, Desai and Potter (2011) added that, a research design is a way that can be used to acquire solutions on questions and problems of the research. The researcher used causal research design which focused on generating a hypothesis with the research questions and dealt with at least four questions.

These questions included; what question to study, what data are relevant, what data to collect and how to analyse the results. Explanatory research was used to answer the 'why' questions and this feature leads to involve causal explanations. The research adopted the explanatory research design also called causal research for all the objectives. Kumar (2012) asserted that a causal research design attempts to reveal "cause and effect" relationship between two

variables under a study. Causal studies offer the advantages of replication if necessity arises and are associated with greater levels of internal validity due to systematic selection of subjects. Causal studies focus on an analysis of a situation or a specific problem to explain the patterns of relationships between variables. Explanatory or causal research design, allows the researcher to examine the nexus between supplier relationship management aspects and performance of pharmaceutical supply chains in Zimbabwe.

3.4 Population and sampling

In selecting the target population, the researcher considered pharmaceutical firms that were vibrant and viable by the time the research was carried out and then sampling was carried out to come up with the desired or actual sample. The study therefore adopted the five sampling steps of Malhotra et al., (2006) and these steps are closely interrelated and relevant to all aspects of the research as they comprise target population, determining the sampling frame, selecting sampling techniques, determining the sample size and execute the sampling process.

3.5 Target Population

The prerequisite in defining the target population in this research is the ability to state the exact specification of who should be and who should not be on the sample (Mack and Woodsong, 2005). According to Tashakkori and Teddlie (2003), a target population is classified as all the members of a given group to which the investigation is related, whereas the accessible population is looked at in terms of those elements in the target population within the reach of the study. Pertaining to this study, the target population of this research study was therefore 55 respondents confined to all staff members working as procurement and logistics officers in reputable pharmaceutical manufacturing and distribution firms in Zimbabwe.

3.6 Sample and sampling procedure

This consists of determining the sample to be used and how the sample is going to be selected. Pertaining to this study, it is going to include the sampling frame, sampling unit and the same size to be used.

3.6.1 Sampling Frame

The purpose of the sample frame is to gain an understanding of the attributes of the whole population based on the characteristics of the sample (May 2007). It allows the researcher to

list the elements of the target population or case study organization so that a sample can be drawn (Churchill and Lacobucci, 2002). The sampling frame describes a list of all population units from which the sample is selected (Cooper and Schindler, 2008). The study targeted the top level management, middle level management and the low level management in all selected pharmaceutical firms under study in Zimbabwe. In other words, the sampling frame of this study composed of the procurement and logistics officers of pharmaceutical companies found in Harare. This gave a more accurate inference to the entire study.

3.6.2 Sampling Unit

Since, Kothari, (2004) is of the view that the researcher will have to decide one or more of sampling that he or she has to select for his or her study. In this case, the researcher used a sampling unit comprising of procurement and logistics staff ranging from top to lower management as they are currently working in viable pharmaceutical firms in Zimbabwe.

3.6.3 Sampling Technique

Stratified sampling was used to classify the employees into the various management levels like top management level, middle management level and lower level management. Kothari (2012) noted that stratified sampling is used when a population from which a sample is to be drawn does not constitute a homogeneous group. This means that stratified sampling involves dividing the population into a series of relevant strata which implies that the sample is likely to be more representative.

Saunders, Lewis and Thorn hill (2009) further support the categorization of homogeneous subjects into various strata and therefore the employees of selected pharmaceutical firms will be categorized into different levels of management.

Notably, application of stratified sampling method involves dividing population into different subgroups and selecting subjects from each stratum in a proportionate manner. Similarly, application of proportionate stratified random sampling technique involves determining sample size in each stratum in a proportionate manner to the entire population. Above all, application of proportionate stratified random sampling generates more accurate primary data compared to disproportionate sampling. Kothari (2012) additionally notes that, multi-stage sampling is used when a population from which a sample is to be drawn does not constitute a homogeneous group.

3.6.4 Sample Size

Determining a sample size is very complex as it depends on other factors such as margins for errors, degree of certainty and statistical technique (Corbetta, 2003). Kombo and Tromp (2009) defined a sample as a collection of units chosen from the universe to represent it. In other words, it is the subset of population that is selected for a study which is representative of that population (Nalzaro, 2012). For this study the strata comprising of 48 respondents from purchasing and logistics department was drawn from 55 vibrant pharmaceutical companies. This was so because Adler and Adler (2011) advised that researchers should sample between 12 to 60 respondents to support the sample size used for the qualitative section of this study. For this study, the stratum is purchasing and logistics officers derived from the selected 48 pharmaceutical firms, upon which one questionnaire was issued per each company.

3.6.5 Slovin's formula of determining the sample size

The current study will determine the sample by help of the Slovin's formula of determining the effective sample size. Kombo and Tromp (2009) defined a sample as a collection of units chosen from the universe to represent it. It is the sub set of population that is selected for a study which is representative of that population (Nalzaro, 2012). The need to select a sample size for this study was crucial due to the different limitations during the research.

This includes financial constraint, limited resources, accessibility and location, which did not allow the researcher to study the entire population

$\boldsymbol{n = N/ (1 + Ne^2)}$ Where n represent the sample size, N represent the total accessible population and e represent the level of precision. Hence the sample size for the study was as follows;

n = N /1+ N (e^2) **N** = the population size (**55**)

n = the sample size (**48**) **e** =Margin of error acceptable or measure of precision is 0.05

Table 3.1 Sample size

Number of Firms	Number of Respondents	Total respondents
48	1	48

Source: Primary data

According to Cooper and Schindler (2011) the researcher should ensure that each organisation is well represented. Pertaining to this study, the stratum was purchasing and logistics officers derived from 48 pharmaceutical companies, from which 1 questionnaire was issued per each company. Therefore, this study resorted to Adler and Adler (2011)'s suggestions, which were true testimonial of the selected respondents. Furthermore, the sample size was carefully considered based on advice from Easterby-Smith et al., (2012), on the understanding that there had been debates on how big a quantitative sample size for research should be, and there were different views held on this debate. Some authors have suggested a minimum ratio of at least five respondents per parameter (Aguinis and Harden, 2009), whereas others are of the view that ten respondents for each estimated parameter should be considered appropriate (Easterby-Smith et al., 2012).

3.7 Data collection methods

In general, there are two types of data, namely primary and secondary data. The researcher might use either both or one of the types of data depending on the type of research and data to be collected by the researcher Saunders et.al, (2007). The data collection methods adopted for this study were both primary and secondary. These included questionnaire survey and document review. Moreover, primary data are originated by a researcher for the specific purpose of addressing the problem at hand as opined by Malhotra and Birks, (2006) whilst, data sources for secondary data, may include books, manuals, directives, proclamation, annual reports and articles. Pertaining to this research, manuals, annual reports and articles related to supplier relationship management and supply chain performance were used. This data served as reference and guide the focus of clarity to research objectives of this study.

The primary sources used in this study include questionnaires, comprising of structured questions, which were issued to the purchasing and logistics officers of pharmaceutical manufacturing and distribution firms in Zimbabwe. According to Fox and Bayat (2007), a researcher should address the design of the study and analysis of the results so that the research can hold quality test and this can be done through reliability. Devaus (2002), note that reliability is the ability of the questionnaire to give the same answer in the same circumstances from time to time. This implies that if respondents will answer a questionnaire the same way on repeated situations, then the questionnaire will be said to be reliable. Both primary and secondary data collection methods are explained in detail in the following sub-sections

3.8 Research instruments

In conducting this research, the researcher used data collection instruments like questionnaires and secondary data to collect information deemed necessary from the targeted respondents.

3.8.1 Questionnaires

Questionnaire administration involved collecting data from through giving questionnaires for filling and collecting them later after they were filled. The method was used because it is a quick (Mugenda and Mugenda, 2003). In addition, it is less time consuming and can adequately cover the entire sample within the proposed time frame (Amin, 2005). Questionnaire administration also offers greater assurance of anonymity; especially if the researcher is handling sensitive issues like procurement practices and do not make people apprehensive (Clough and Nutbrown, 2002). The questionnaires were also preferred because personal administration of questionnaires to individuals helps to develop close relationships with the respondents.

The primary data was collected through a self-administered questionnaire given to member staff from purchasing and logistics since it was used as the key-informant method. Wu (2010) explains that views of key informants are widely used in business research because they are deemed to be the most knowledgeable about the issues being investigated for which they are directly responsible. Therefore, the structured questionnaire had both closed- ended questions and a customized five-part Likert scale which was used to collect data on the independent variables from the member staff. Respondents were asked to indicate agreement with each item. Each had a five-point scale ranging from 1=strongly disagree, 2=disagree, 3=indifferent, 4=agree, and 5=strongly agree.

3.9 Data collection procedures

Before proceeding to the field for data collection, the researcher sought and obtained an introductory letter provided by Bindura University of Science Education which was subsequently submitted in person to the selected pharmaceutical firms under study. This involved consulting responsible authorities of the selected pharmaceutical firms prior to research study. On the other hand, a cover letter explaining the objectives of the study and

assuring the respondents' confidentiality and asking them to participate in the study accompanied the questionnaire.

Worthy to note is that, self-administered questionnaires are associated with high unit response rates (Aguinis, Hill and Bailey, 2019), although they are generally characterized with some item non-responses (Bryman, 2016). Arguably, turnaround period for filling in self-administered questionnaires is generally short thus making this method particularly suitable for studies in the academia as they have relatively limited durations and resources (Hair et al., 2014). Moreover, self-administered questionnaires also eliminate interviewer biases through enhancing respondent control (Hair et al., 2014), thereby ensuring respondent anonymity (Wegner, 2013). The survey was conducted using the drop-and-pick strategy. This method involves handing the questionnaires to the selected respondents and allows them some time to fill-in (Maholtra, 2006). Subsequently after the lapse of an agreed period, the researchers had to come and collect the completed questionnaires from the respondents (Hair et al., 2014).

3.10 Pilot study

Activities before the fieldwork process consisted of instrument design and development. Questionnaire administration involved pre-contact with the respondents in the selected pharmaceutical firms under study. In order to ensure content validity, the preliminary questionnaire was pre-tested on a pilot set of respondent managers for comprehension, logic and relevance. This was also done to indicate whether the type of data collected would be meaningfully analysed in relation to the stated research objectives and questions (Kinyua 2001). The pilot study revealed deficiencies in the instruments which were later addressed before main study. Basing on Mugenda and Mugenda (2009) recommendations, the researcher set sixteen (16) pilot questionnaires representing 33% of the sample size and which was within the range of 10% to 40%.

3.11 Validity and Reliability of Instruments

Polit and Beck (2010), stated that validity is the quality criterion referring to the degree to which inferences made in a study are accurate and well founded in measurement, the degree to which an instrument measures what it is intended to measure. This study used content validity which is the type of validity that shows the extent to which elements of research questions and objectives are represented in the study (Mugenda and Mugenda, 1999). The

researcher requested the experts in the field of research to evaluate the relevance of items contained in these instruments in deriving the information sought by the study. Their input, suggestions and clarifications were incorporated to improve the instruments. The instrument was piloted with 2 respondents. Adjustments will be made to assess the questionnaires in relation to the objectives of the study.

Reliability refers to the extent the instrument would be consistent in measuring what they are expected to measure (Mugenda and Mugenda, 1999). Random errors arise from unclear instructions to the respondents and ambiguous questionnaires. The researcher minimised random errors by cross checking the questionnaires during piloting. This study used test-re-test technique to ascertain reliability of research instruments. In this study reliability of the questionnaire was examined through Cronbach's Alpha value generated by Statistical Package for Social Sciences (SPSS Version 23.0) program. According to Taber (2018) Cronbach's alpha refers to an internal consistency measure which shows how closely related a set of items are as a group. Furthermore, Sekaran (2010) opines that a Cronbach alpha of at least 0.7 should be accepted as adequate since the higher the Cronbach alpha the higher the internal consistency and reliability. George and Mallery (2003) likewise confirm that a Cronbach's Alpha coefficient higher than 0.7 is adequate and approves the inside unwavering quality of the information.

3.12 Data Analysis and Presentation

Data was analysed using quantitative technique. Kerlinger (2006) defines data analysis as categorizing, manipulating and summarizing of data in order to obtain answers to research questions as the researcher examined the completeness of questionnaires by performing processes like editing, coding and cleaning of the data. Data collected was analysed using Statistical Package for Social Sciences (SPSS Version 23.0) program and Microsoft Excel for generation of reports. For descriptive analysis, the mean, mode, variance and standard deviation was used to determine the respondents' agreement or otherwise with statements under each variable.

On the other hand, inferential statistics included used Model summary, ANOVA and Regression Analysis which were used to examine the relationship between independent variable (supplier relationship management) and dependent variable (supply chain performance that is cost saving performance, delivery performance, improved quality performance and flexibility). Moreover, content analysis is highly suitable in unobtrusive and

interview data which is not analysable until the information transmitted has been systematically condensed and rendered comparable (Abbott and McKinney, 2013). For this study, Linear multiple linear regression analysis was used to find out percentage of change on dependent variable influenced by independent variables and the equation was: SCP = β0 + β1SRM + β2OS + β3TN+ β4TRG + ε

Where: SCP = Supply Chain Performance (cost saving, product quality performance, delivery performance and flexibility) of pharmaceutical firms in Zimbabwe.

βo =constant (co efficient of intercept)
SRM= Supplier Relationship Management
OS= Organisational structure
TN = Tenure
TRG = Training
β1 to β4 = Regression coefficient of four (4) variables
ε = error term

3.13 Ethical Considerations

Ethics in research are interested in analysing ethical aspects raised by people involved in the research process. Bethlehem and Silva (2012) defined ethics as systems of moral values that highlight on the level to which research techniques scrutinize professional, legal and social obligations. Human dignity will be upheld in that participants will be reminded of their privacy and confidentiality through the right to keep some information from the public and keeping the confidentiality aspect by limiting access to private information. Indeed, all respondents are to remain anonymous (Hill, 2005).

Moreover, the ethical principle of informed consent was applied to participants as they were permitted to choose whether to participate or not after they have considered all the relevant information about the risks involved if they partake in the research. In addition, debriefing was conducted before data collection and the participants were oriented on the aim of the study, potential benefits and expected results.

3.14 Measurement Scale

The measurement of variables was done by measuring major study variables competition, transparency, and professionalism which were undoubtedly measured using items assessed on

a five point Likert scale ranging from 1=strongly disagree, 2=disagree, 3=neutral, 4=agree, and 5=strongly agree. According to Amin (2005), Likert scales show the strength of a person's feelings towards a particular issue or question. Additionally, they are also easy to construct, administer and analyse. Notably, cost saving performance and improved quality performance was measured using measurement scale adopted from Mukucha and Chari (2021); delivery performance was also measured using a scale which was refined from a research by Kotler and Keller (2016). Alternatively, flexibility was measured using Aramyan, Lansink, and Kooten (2005) measurement scale.

CONSTRUCT	**ITEM CODE**	**ITEM DESCRIPTION**
Cost saving performance	C1	Our firm segment our supply base based on the supply risk exposure and criticality of items
	C2	We have reduced on organizational spend by segmenting our supply base
	C3	Information exchange has brought considerable improvements in the pace of inventory movement
	C4	Supplier induced disruptions have reduced through partnerships
	C5	Our organization has improved in resource optimization through segmentation
Improved Quality performance	Q1	Through information exchange our firm meet expected standards and have less rejection or returns
	Q2	We have improved product performance through data sharing and onsite assistance
	Q3	Collaboration has increased supplier commitment to transportation and storage of temperature sensitive products
	Q4	Our firm has realized enhanced innovation due to sharing of ideas and joint problem solving

	Q5	Our firm has innovatively developed high quality products through supplier collaboration
Delivery performance	D1	Our firm has improved has product packaging through cooperation
	D2	Supply Chain transactions have been delivered at the right time, cost and as per the contract through collaborative execution.
	D3	Our vendors or suppliers have reduced lead times for replenishment of critical medical supplies.
	D4	Our firm has had minimal stock outs due to collaborating with suppliers in inventory management
	D5	Our company has an outstanding on-time delivery record to our major customers through data sharing
Flexibility	F1	Our firm share forecasted demand data in real time with our suppliers
	F2	Our response to ever changing client demands has improved due to supplier cooperation
	F3	Our firm's resilience (ability to adapt to future shocks and impending risks) has increased through effective communication and cooperation with suppliers
	F4	Communication and collaborative planning have increased flexibility and responsiveness to customer requirements
	F5	Our firm has maintained its established high service levels during the pandemic and other disease outbreaks like cholera through communication

3.15 Hypothesis testing

For this study, the hypothesized relationships were tested using F-test by comparing the P value or calculated using 0.05 level of significance. If the P value is found to be less than or equal to α, significance level α= 0.05, then the hypothesis should be rejected. If the p-value is greater than α=0.05, then Hypothesis was not rejected. The lower the P-value, the more evidence it is that there is in favour of rejecting the hypothesis.

3.16 Chapter summary

Specifically, this section of the research study dwelt much on the research methodologies. The researcher in this chapter established the research methodology as he was unfolding on how the research was carried out. Notably, it outlined all the activities and procedures undertaken during the course of the research study. Above all, items discussed in this section, involves the research design, subjects, research instruments, data collection procedures and data analysis methods. The next chapter would be chapter four and it will focus on data analysis, representation and discussion.

CHAPTER IV

DATA PRESENTATION, ANALYSIS AND DISCUSSION

4.0 Introduction

The review of relevant theories in the previous chapter provided a robust insight into approaches of supply relationship management in relation to supply chain performance in the pharmaceutical industry of Zimbabwe. The reviewed literature has given a direction for identifying the appropriate research methodology for the research study. This chapter will identify the research methodology used for exploring and validating the research questions, as stated in Chapter One. The chapter will further expound on and justify the research methodology. This will include the philosophy, methodological approach, sample size, sampling techniques, data collection procedure and method of data analysis. The details will be used to address the research objectives of the study.

4.1 Response rate

The researcher in carrying out the study targeted 55 respondents. Emore (2007) asserts that a response rate is the extent to which the collected data takes care of all the sample items, a ratio of actual respondents to anticipated number of persons who responded to the study. Babbie (2011) also asserted that return rates of 50% are acceptable to analyse and publish, 60% is good and 70% is very good. Therefore, a sample of 48 respondents comprising of top level management, middle level management and the low level management in selected pharmaceutical firms in Zimbabwe was used. Therefore it means a total of forty-eight (48) self-administered questionnaires were issued as revealed in table 1 below.

4.1.1 Response rate on questionnaires

Table 4.1 Analysis of questionnaire response rate n=48

(Questionnaire)	frequency (n)	Percentage (%)
Successfully filled and returned	42	87.5%
Unsuccessfully filled and not returned	06	12.5%

Total Questionnaires issued	**48**	**100%**

Source: Primary data (2023)

Information revealed from the table above shows that, forty (42) questionnaires were successfully filled and returned representing a response rate of 87.5%. The remaining 12.5% is due to official duties of some staff in their work place at the time of data collection. The achieved response rate of 87.5% was considered high by the researcher and hence it justified the use of the findings as a basis for making conclusions and recommendations on the subject under review as (Creswell, 2013) suggests that over 70% response rate is excellent for data analysis. The high response rate was attributed to the fact that the questionnaires were distributed using a drop and pick method which allowed respondents to have ample time in answering the questionnaire which was collected on a later date.

4.1.2 Pilot test results

Internal consistency test of the research instrument was conducted by the study. This was done through a pilot study which was conducted in Harare to validate the study instrument, with 16 participants sampled; representing 33% of the sample size whilst also varying levels of reliability were considered necessary.

Depending on the scale's design and intent, a Cronbach Alpha of greater than 0.7 indicates that the tools are reliable (Cooper and Schindler, 2008). The pilot study's aggregated reliability statistics were as follows as shown in Table 4.2 shown below.

Table 4.2 Reliability results of research questionnaire

(Variables)	Test items	Cronbach's Alpha Coefficient	Decision
Supplier segmentation	05	0.812	Accepted
Supplier collaboration	05	0.835	Accepted
Information Exchange	05	0.816	Accepted
Supply chain performance	05	0.819	Accepted
Average	**20**	**0.821**	

Source: Primary data (2023)

The table 4.2 above shows reliability results where supplier segmentation had a Cronbach's alpha coefficient of 0.812, supplier collaboration had a Cronbach's alpha coefficient of 0.835,

and Information exchange had a Cronbach's alpha of 0.816 while performance of supply chain pharmaceutical industry had a Cronbach's alpha coefficient of 0.816. On average, the independent variables had a Cronbach's coefficient alpha of 0.821. This therefore means that Cronbach alpha "0.7" value was met by the variables. This implies that all the independent variables were reliable for conducting the study because they had Cronbach's coefficient alpha of more than 0.7.

4.2 Demographic data of the respondents

Respondents were asked to provide confidential demographic information regarding their gender, age, level of educational qualifications, work experience or period of service. The analysis of the demographic data was done and shown on a single table comprising the Purchasing, Logistics and Warehouse officers in pharmaceutical industry in Zimbabwe.

Table 4.3 showing respondents' socio-demographic characteristics

Variable	Frequency (N=55)	Percentage (%)
Gender		
Male	28	67%
Female	14	33%
Age		
18-30	08	19%
31-40	17	40%
41-50	12	29%
51 and above	05	12%
Qualifications		
Certificate	07	17%
Diploma	08	19%
Bachelor's degree	19	45%
Master's degree	05	12%
Doctorate	03	7%
Period of service		
Less than 5yrs	10	24%
6-10yrs	20	48%

11-15yrs	06	14%
16-20yrs	04	10%
21yrs and above	02	5%

Source: Primary data (2023

The study reveals that male respondents dominated the industry when compared to their female counterparts. This is shown by study results reflecting that 28 (67%) were male respondents while 14 (33%) were female respondents. This implies that the majority of staff members working in the pharmaceutical industry are males. Therefore, this may be attributed to the fact that work experience, skills and technical know is more displayed by males than female staff as technical jobs are easily done by male employees therefore making the selected pharmaceutical companies prefer more males than females.

Generally, gender disparities in work places are indicators of job preferences for some jobs by gender groups as opined by (Ratemo, 2011).

Moreover, respondents were asked to indicate their age groups between the age range of less than 5yrs and 26 years and above. Responses from the table 4.4 shows that the age group of 31-40 years had the highest number of respondents17 (40%), followed by an age group of 41-50 which constituted 12 respondents representing a share of (29%). Furthermore, respondents who fell in the age group of 18-30 were represented by 08 respondents with a share of (19%) whilst only 5 (12%) fell in the highest age group of 51 years and above hence being the age range with the least respondents. However, productivity in an organization can be enhanced using younger generation (Kamenya, 2014).

The level of education that the respondents were given to choose from includes, certificate or Diploma, Undergraduate degree, Master's degree and Doctorate as shown in table 4.5 above. The results reveals that majority of the respondents in the pharmaceutical industry were degree holders 19 (45%) followed by diploma holders 8 (19%), which was slightly above the certificate holders represented by 17% of the respondents. On the other hand, masters' degree holders had a share which constituted 5 respondents (12%) and the least share was realized by Doctorate holders with 7%. Generally, level of education affects productivity of employees on how they make strategic decisions (Weber, 2008). Employees with higher level of education are therefore preferred and given more priority. The Certificate level was the lowest level of qualification due to the nature of the industry as their limited skills would mean the general hands staff. This

implies that pharmaceutical organisations employ skilled staff to improve their performance. This entails that more qualified staff with masters are employed to provide strategic decisions needed by the management.

Admittedly, the study findings show that majority of the respondents 20 (48%) have stayed in the pharmaceutical industry for a period of 6-10 years followed by those who have stayed for a period of less than 5 years 10 (24%). The working experience of 16-20 years and 21 years and above had (10%) and (5%) respectively. Limited work experience can be attributed to the fact that the majority are fresh graduates recently employed thereby acquiring new skills in the industry. Matooket, al., (2009) noted that employees with average experience are more productive than those who have stayed in the organization for a longer period.

4.3 Responses on management level

Table 4.4 showing management level

Management Level	frequency (n)	Percentage (%)
Top management	09	21%
Middle management	20	48%
Lower management	13	31%
Total	42	100%

Source: Primary data (2023)

The results in the Table 4.4 indicates that majority of the respondents positively agreed to the question on the management level within their institutions. The general findings of the questionnaire reveals that the middle management had a larger portion of 20 respondents with a share of 48%, followed by lower management which constitutes 31% representing 13 respondents and finally comes top management positions which were represented by the least share of 21% thus 9 respondents. This clearly shows that the experienced and educated respondents could understand the problems in pharmaceutical industry and can provide correct information that could contribute to the validity of this study. This was done to ascertain the extent to which they understood the supplier relationship management.

4.4 Analysis of study variables

The respondents were asked to rate the factors (variables) which enhance the pharmaceutical supply chain performance. Using the five-point Likert scale rating, a criterion is deemed significant if it has a mean score of 3.4 or more. Where two or more criteria have the same mean score, the one with the lowest standard deviation is assigned the highest significance ranking. Standard deviation values of less than 1.0 indicate consistency in agreement among the respondents of the reported level of results (Ahadzie, 2007). The procedure, findings and relevant discussions are as follows.

4.4.1 Cost Saving through Supplier Relationship Management

The study examined the influence of supplier relationship management on cost saving. The findings are shown on table 4.5 below

Table 4.5 Cost Saving through Supplier Relationship Management

	N	Mean		Std Deviation
	Statistic	Statistic	Std Error	Statistic
Our firm segment our supply base based on the supply risk exposure and criticality of items	42	2.3345	.08132	.57340
We have reduced on organizational spend by segmenting our supply base	42	3.6071	0.9264	.53362
Information exchange has brought a considerable improvements in the pace of inventory movement	42	3.5423	.08510	.63207
Supplier induced disruptions have reduced through partnerships	42	3.5235	.10152	.56013
Our organization has improved in resource optimization through segmentation	42	3.9170	.11207	.50104

The study of realising cost savings through supplier relationship management practices was shown using mean averages and standard deviations in the investigation. Participants were asked to rate how much they agreed with a statement about the influences of supplier relationship management on the performance of pharmaceutical firms. 5 point Likert scale statements were created, and the results are shown in table 4. 5. The findings showed that majority of the respondents disagreed with the statement that firms segment their supply base based on the supply risk exposure and criticality of items ($\overline{x}$ = 2.3345, SD= .57340). The majority of the respondents held the view that we have reduced on organizational spend by segmenting our supply base ($\overline{x}$ = 3.6071, SD= .53362).

Worthy to note is that, majority of the respondents strongly agreed with the statement that information exchange has brought a considerable improvement in the pace of inventory movement ($\overline{x}$ = 3.5423, SD= .63207). Moreover, the majority of participants held the view that supplier induced disruptions have reduced through partnerships ($\overline{x}$ = 3.5235, SD= .56013). Undoubtedly, majority of the respondents agreed with the assertion that our organization has improved in resource optimization through segmentation ($\overline{x}$ = 3.9170, SD= .50104).

Using a 5-point Likert scale mean of more than ($\overline{x}$ = 3.4) in four out of five statements, it is clear that a major section of the respondents agreed with the most of the assertions on cost savings realized through supplier relationship management practices. The findings of the study show that supplier relationship management has a positive influence on cost efficiency of pharmaceutical firms. These findings mirror those of Munyimi and Chari (2018) who established supplier relationship management enabled organisations to reduce inventory levels by introducing systems such as JIT (just in time) and VMI (vendor managed inventory), and reduced time to the market. This resulted in organizations achieving huge cost savings. Segmenting and collaborating with the suppliers together with information sharing have proved to be critical for improving the company's operational and functional capabilities in managing supply, as well as creating value and synergy with suppliers; consequently, playing a critical role in enhancing the efficacy in addition to performance of supply chain.

4.4.2 Improved Quality through Supplier Relationship Management

The study established the influence of supplier relationship management on product quality enhancement in the pharmaceutical industry. Findings were presented using inferential statistics as shown on table 4.6.

Table 4.6 Improved Quality through Supplier Relationship Management

	N	Mean		Std Deviation
	Statistic	Statistic	Std Error	Statistic
Collaboration has increased supplier commitment to transportation and storage of temperature sensitive products	42	2.2710	.03333	.32410
We have improved product performance through data sharing and onsite assistance	42	3.9102	.5571	.53314
Through information exchange our firm meet expected standards and have less rejection or returns	42	2.4011	.7854	.65465
Our firm has realized enhanced innovation due to sharing of ideas and joint problem solving	42	3.6542	.09264	.54327
Our firm has innovatively developed high quality products through supplier collaboration	42	3.8254	.04632	.37132

The study sought to establish the influence of supplier segmentation, collaboration and information exchange on the quality of pharmaceutical products Zimbabwe. The findings in table above reveals that most of the respondents agreed with the statement that collaboration with service providers has increased supplier commitment to transportation and storage of temperature sensitive products ($\overline{x}$ = 2.2710, SD= .32410). Likewise, many respondents agreed with the statement that we have improved product performance through data sharing and onsite assistance ($\overline{x}$ = 3.9102, SD= .53314). In addition, the majority of participants held the view that through information exchange our firm meet expected standards and have less rejection or returns ($\overline{x}$ = 2.4011, SD= .65465). Moreover, most of the respondents agreed with the statement that our firm has realised enhanced innovation due to sharing of ideas and joint problem solving ($\overline{x}$ = 3.6542, SD= .54327). Lastly, the majority of the respondents agreed with the statement that

our firm has innovatively developed high quality products through supplier collaboration ($\overline{x}$ = 3.8254, SD= .37132).

Using a five-point scale Likert mean more than ($\overline{x}$ = 3.4) in three out of five statements clearly shows that a major section of the respondents agreed with the notion that supplier collaboration and information sharing play a key role in product quality enhancement. The findings of the study reveal that supplier collaboration and information exchange have a positive influence on pharmaceutical products performance. They further entail that these two supplier relationship management practices facilitates production of new products as well as improvement of supply chain processes which in turn positively impact on the overall quality of the product. These findings mirror those of Denhere and Choga (2022) who revealed that organisations enjoy several supplier relationship management benefits that include information sharing and involvement of suppliers in new product development as these contribute positively to their overall organizational performance. Their study confirms that product quality is better enhanced when suppliers are involved in new product development which in turn enhances companies' innovation and performance**.**

4.4.3 Enhancing Delivery Performance through Supplier Relationship Management

The study established the influence of supplier relationship management on delivery performance in the pharmaceutical industry. Findings were presented using inferential statistics as shown on table 4.7.

Table 4.7 Enhancing Delivery Performance through Supplier Relationship Management

	N	Mean		Std Deviation
	Statistic	Statistic	Std Error	Statistic
Our firm has improved has product packaging through cooperation	42	3.4160	.07854	.95306
Supply Chain transactions have been delivered at the right time, cost and as per the contract through collaborative execution	42	3.5621	.8949	.45865
Our vendors or suppliers have reduced lead times for replenishment of critical medical supplies.	42	3.6033	.09264	.55433

Our firm has had minimal stock outs due to collaborating with suppliers in inventory management	42	3.5246	.12208	.57752
Our company has an outstanding on-time delivery record to our major customers through data sharing	42	3.7052	.11679	.46012

The research aimed to assess the influence of supplier collaboration and information flow on delivery performance pharmaceutical firms in Zimbabwe. The descriptive findings in the table above illustrated that most of the respondents agreed with the statement our firm has improved has product packaging through cooperation ($\overline{x}$ = 3.4160, SD= .95306). Additionally, most of the respondents agreed with the statement that supply chain transactions have been delivered at the right time, cost and as per the contract through collaborative execution ($\overline{x}$ = 3.5621, SD= .45865). Nonetheless, many of the respondents agreed with the statement that our vendors or suppliers have reduced lead times for replenishment of critical medical supplies ($\overline{x}$ = 3.6033, SD= .55433). Furthermore, most of the respondents agreed with the statement that our firm has had minimal stock outs through collaborating with suppliers in inventory management ($\overline{x}$ = 3.5246, SD= .57752). Similarly, the majority of participants held the view that our company has an outstanding on-time delivery record to our major customers through data sharing ($\overline{x}$ = 3.7052, SD= .46012).

Using a five-point scale Likert mean more than ($\overline{x}$ = 3.4) it is clear that nearly all of the respondents agreed with the all the statements on product and service delivery performance improvements realised by pharmaceutical firms through supplier involvement and information sharing. Therefore, the findings of the study highlights that with a high level of communication, companies can improve on time delivery rates to customers and adapt to rapidly changing demand without adding to inventory costs. Moreover, these findings concur with those of Bryman (2017) who postulates that supplier collaboration aligns supply and demand across tiers. The findings were further supported by McGinnis and Vallopra (2000) who assert that supplier involvement creates advantages in terms of lead times, costs and quality.

4.4.4 Achieving Flexibility through Supplier Relationship Management

The study established the influence of supplier relationship management on flexibility pharmaceutical supply chains. Findings were presented using inferential statistics as shown on table 4.8**.**

Table 4.8 Achieving Flexibility through Supplier Relationship Management

	N	Mean		Std Deviation
	Statistic	Statistic	Std Error	Statistic
Our firm share forecasted demand data in real time with our suppliers	42	3.4706	.07854	.54632
Our response to changes in client demands has improved due to supplier cooperation	42	3.5013	.8949	.55657
Our firm's resilience (ability to bounce back to normalcy post shocks or fluctuations) has increased through effective communication and cooperation with suppliers	42	2.2817	.09264	.65641
Communication and collaborative planning have increased flexibility and responsiveness to changing customer requirements	42	3.6456	.12208	.51803
Our firm has maintained its established high service levels during the pandemic and other disease outbreaks like cholera through communication	42	3.8026	.11679	.34706

The study sought to determine the influence of supplier relationship management practices mainly supplier involvement and data exchange. The descriptive findings in table 4.8 illustrated that most of the respondents agreed with the statement that our firm share forecasted demand data in real time with our suppliers ($\bar{x}$ = 3.4706, SD= .54632). In addition, many of the respondents agreed with the statement that our response to untimely ever

changing client demands has improved due to supplier cooperation ($\overline{x}$ = 3.5013, SD= .55657). Besides, the majority of participants disagreed with the argument that our firm's resilience (ability to bounce back to normalcy post shocks or fluctuations) has increased through effective communication and cooperation with suppliers ($\overline{x}$ = 2.2817, SD= .65641). Further, many of the respondents agreed with the statement that effective communication and collaborative planning have increased flexibility and responsiveness to changing customer requirements ($\overline{x}$ = 3.6456, SD= .51803). Moreover, most of the respondents agreed with the statement that our firm has maintained its established high service levels during the pandemic and other disease outbreaks like cholera through communication ($\overline{x}$ = 3.8026, SD= .3706).

Using a five-point Likert scale mean of more than ($\overline{x}$ = 3.4) in four out of five statements, it is clear that a major section of the respondents agreed with the all the assertions on supplier relationship management. The findings of the study show that supplier collaboration and information have a positive influence on the performance of pharmaceutical supply chains. These findings mirror those of Enz and Lambert (2012) who revealed that collaborative relationships with key suppliers can co-create value and its proper implementation has helped organisations gain access to valuable resources and supplies, reduce costs, enhance their flexibilities, ensure quality, implement technology successfully, and improve overall supply chain performance. Further, the findings were supported by Maskey, Fei, Nguyen (2021) whose findings demonstrated that delivery and flexibility performance are significantly affected by information sharing.

4.5 Presentation of Inferential Analysis Findings

Inferential statistical analysis allowed the researcher to draw inferences that exist and make valuable generalizations about the hypothesis linked to this research study and are stipulated below as follows:

H1: Supplier relationship management leads to improved cost saving performance.

Cost saving= β0 + β1 supplier segmentation + β2 supplier collaboration + β3 Information exchange

H2: Supplier relationship management leads to improved product quality.

Product quality= β0 + β1 supplier segmentation + β2 supplier collaboration + β3 Information exchange

H3: Supplier relationship management practices lead to improved product delivery performance.

Delivery performance= β0 + β1 supplier segmentation + β2 supplier collaboration + β3 Information exchange

H4: Supplier relationship management leads to improved supply chain flexibility.

Flexibility= β0 + β1 **supplier segmentation** + β2 **supplier collaboration** + β3 **Information exchange**

4.4.1 Correlation analysis

The study determined the correlation between independent and the dependent variables as shown in table below.

Table 4.10 Correlation analysis of study variables

Variables		**Cost Savings**	**Quality Performance**	**Delivery Performance**	**Flexibility**	**Supplier Relationship management**
Cost Saving	Pearson correlation	1	.698**	.756**	.753**	.551**
	Sig(2-tailed)		.000	.000	.000	.000
	N	42	42	42	42	42
Quality Performance	Pearson correlation	**.**698**	1	.802**	.393**	.536**
	Sig(2-tailed)	**.**000		.000	.003	.000
	N	42	42	42	42	42
Delivery Performance	Pearson correlation	**.**756**	**.**802**	1	.627**	.781**
	Sig(2-tailed)	**.**000	**.**000		.000	.000
	N	42	42	42	42	42
Flexibility	Pearson correlation	.753**	.394**	**.**627**	1	.578**
	Sig(2-tailed)	**.**000	.003	**.**000		.000

	N	42	42	42	42	42
Supplier relationship management	Pearson correlation	.551**	.536**	.781**	.578**	1
	Sig(2-tailed)	.000	.000	.000	.000	
	N	42	42	42	42	42

****. Correlation is significant at the 0.01 level (2-tailed)**

The study discovered a positive correlation between both the set of dependent [predicted] variables and the independent [predictor] variable ($r > 0.2$, $p < .001$ in all cases). The strength of the relationship between the independent variable and the dependent variables was large with cost saving (r = .551, large), quality performance (r = .536, large), delivery performance (r = .781, large) and flexibility (r = .578, large). The findings obtained on the part of cost saving are in line with those of Munyimi and Chari (2018), who established that there was a positive correlation between supplier relationship management and cost performance. Additionally, the findings obtained for quality performance are in line with those of Denhere and Choga (2022) who revealed that there was a positive correlation between supplier relationship management and quality performance. Furthermore,, the findings obtained for delivery performance are in line with those of Bryman (2017), who established that there was a positive correlation between supplier relationship management and delivery performance. Finally, the findings obtained for flexibility are in line with those of Maskey, Fey and Nguyen (2021) who revealed that there was a positive correlation between supplier relationship management and firm flexibility.

4.4.2 Regression analysis findings

Table 4.11 Regression analysis findings

To establish the strength of the relationships in the model, a model summary was used and the results are shown in the table below

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.807[a]	.652	.625	.16286
2	.810[b]	.657	.560	.2448
3	893[c]	.797	.791	.31632
4	0.888[d]	.789	.757	.250

Source: Research data (2023)

The results shown in table 4.11 present the model summary used of the regression model in expounding the study phenomena. In the first model, the R^2 is 0.652 which implies that 65.2% of the changes in cost savings (dependent variable) could be attributed to supplier relationship management practices (independent variable). On the second model, R^2 value is 0.657 which implies that 65.7% of the changes in product quality improvement (dependent variable) could be attributed to supplier segmentation, supplier collaboration and information exchange (independent variables). The third model with the R^2 value of 0.797 indicates that 79.7% changes in delivery performance were attributed to supplier relationship management practices. Lastly, the fourth model with R^2 value of 0.789 implies that 78.9% changes in the firm's flexibility is attributed to the implementation of supplier relationship management. Positivity and all values of R show that the model summary is significant and therefore gives logical support to the study model.

4.4.3 Analysis of variance findings

ANOVA was used to establish the significance of the regression model. Statistically, a model is considered significant if its p-value is less or equal to 0.05.

Table 4.12 ANOVA.

ANOVA[a]						
Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig**
1	Regression	5.250	2	2.625	23.588	.000
	Residual	10.530	39	0.270		
	Total	15.780	41			
2	Regression	3,772	2	1.886	21.663	.000

	Residual	12.008	39	0.308		
	Total	15.780	41			
3	Regression	6.065	2	3.0324	24..301	.000
	Residual	9.715	39	0.249		
	Total	15.780	41			
4	Regression	4.992	2	2.496	20.008	.000
	Residual	10.788	39	0.277		
	Total	15.780	41			

Source: Research data (2023)

Table 4.12 provides ANOVA results which show a statistically significant overall model for model 1, 2, 3 and 4.

4.4.4 Regression Coefficients

The findings of the coefficients are illustrated in the table below.

Table 4.13 Regression Coefficients

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.380	.401		4.428	.000
	Supplier segmentation	.244	.201	.206	4.790	.000
	Supplier collaboration	.186	.125	.213	5.362	.000
	Information exchange	.109	.125	.141	6.980	.000
2	(Constant)	.224	.039		.305	.001
	Supplier segmentation	.309	.062	.273	5.746	.000
	Supplier collaboration	.484	.073	.448	6.504	000
	Information exchange	.488	.084	.508	5.847	000
3	(Constant)	.108	.354		.305	.001
	Supplier segmentation	.478	.076	.454	6.389	.000
	Supplier collaboration	.342	.067	.356	5.072	.000
	Information exchange	.341	.066	.354	5.070	.000

4	(Constant)	.109	.354		.305	.001
	Supplier segmentation	.360	.063	.236	4.929	.000
	Supplier collaboration	.489	.083	.508	5.846	.000
	Information exchange	.498	.081	.501	4.801	.000

Source: Research data (2023)

In model one in table 4.13 above, supplier relationship management practices (supplier segmentation supplier collaboration and information sharing positively and significantly influences cost savings. In model two, the findings also demonstrated that supplier relationship management practices had positively and significantly influence the quality of pharmaceutical products. In model three, the findings further recognized that supplier segmentation; collaboration and information flow had a positive and significant influence on delivery performance of pharmaceutical companies. Finally, supplier relationship management practices have revealed to have a positive and significant influence on supply chain flexibility. Therefore, the overall regression findings showed that there was a positive and significant relationship between supplier relationship management and the performance pharmaceutical supply chains. Consequently, an increase in the supplier relationship management facets would lead to a corresponding increase in the supply chain performance of pharmaceutical firms in Zimbabwe. To this end the optimal model was

$$\mathbf{Y= \beta0+\beta1X1+ \beta2X2 + \beta3X3 + \beta4X4+ \varepsilon}$$

Where Y= Supply chain performance measurements (cost saving, quality performance, delivery performance and flexibility)

β0=constant

βi is the coefficient for Xi (i = 1, 2,3,4)

X1 = Supplier Segmentation

X2 = Supplier collaboration

X3 = Information exchange

ε = error term

4.5 Hypothesis testing

Table 4.14 shows the summary of hypothesis testing

Table 4.14 Summary of hypothesis testing

Hypothesis	Beta	Accept or reject
H1: Supplier relationship management leads to improved cost saving performance	β=0.476;p=0.000< 0.05	**Accept H1**
H2: Supplier relationship management leads to improved product quality	β=0.270;p=0.005< 0.05	**Accept H2**
H3: Supplier relationship management leads to improved product delivery performance	β=0.247;p=0.003< 0.05	**Accept H3**
H4: Supplier relationship management leads to improved supply chain flexibility	β=0.224;p=0.000< 0.05	**Accept H4**

In the study, the hypothesis **H_1** hypothesized that supplier relationship management relationship management leads to cost saving performance. The results showed that supplier relationship management is a significant predictor of cost savings in the pharmaceutical industry (β =0.450; $p< 0.05$). The P- value of 0.000 that is less than 0.05 indicates the significant influence of supplier segmentation on performance of supply chain in pharmaceutical industry.

Hence, the hypothesis that supplier relationship management significantly influences the cost savings in the pharmaceutical industry was accepted at a significance level of 5%. The findings strongly concur with the findings of Munyimi and Chari (2018) who established that supplier relationship management is essential for saving costs through inventory management systems.

Secondly, the hypothesis **H_2** hypothesized that supplier relationship management leads to improved product quality. The findings of the study (β =0.268; $p<0.05$) indicates that supplier relationship management influences product quality performance. Hence, the hypothesis was accepted at significance level of 5%. These findings mirror those of Denhere and Choga (2022)

who assert that supplier relationship management facilitates product innovation and process improvements which in turn positively affect the final product quality.

More so, hypothesis **H_3** hypothesized that supplier relationship management leads to improved product delivery performance. The results were (β =0.249; p>0.05) indicate that supplier relationship management influences delivery performance. The P-value of 0.003 is less than 0.05 meaning that there is a significant influence of supplier relationship management on delivery performance of pharmaceutical firms. Therefore, the null hypothesis was rejected at 5% level of significance. This implies that supplier relationship management has a significant influence on performance of supply chains. These findings are in line with those of McGinnis and Vallopra (2000) who assert that supplier involvement creates advantages in terms of lead times.

Finally, hypothesis **H_4** hypothesized that supplier relationship management leads to improved supply chain flexibility. The results were (β =0.316; p>0.05) indicates that supplier relationship management influences resilience and responsiveness. The P-value of 0.000 is less than 0.05 meaning that there is a significant influence of supplier relationship management on supply chain flexibility in pharmaceutical industry. Therefore, the hypothesis was accepted at 5% level of significance. This implies that supplier relationship management has a significant influence on flexibility. These findings are in line with findings of Maskey, Fei, Nguyen (2021) whose findings demonstrated that flexibility is significantly affected by supplier collaboration and information sharing.

4.7 Chapter summary

This chapter has presented the results obtained from the study's data analysis. It has also discussed findings extrapolated from questionnaires distributed in the field work with an attempt to answer the research questions guiding this study. Moreover, the chapter has introduced statistical evaluations undertaken for the study together with Cronbach alpha and Pearson product-momentum correlation coefficients in terms of existing relationship amongst the study's variables.

CHAPTER V

SUMMARY, DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

5.0 Introduction

This chapter provides a summary of the major findings, conclusion and recommendations in relation to the stated purpose. It further gives suggestions on areas for further studies. The study aimed at examining the impact of supply relationship management on supply chain performance of pharmaceutical firms in Zimbabwe. Therefore, in line with research objectives of this study we conclude and suggest recommendations based on the findings presented in relation to the literature review. Nevertheless, suggestions for further research and limitations are also dealt with.

5.1 Summary of the study

This study sought to focus on implementation of supplier relationship management due to increasing pressure for organizations to enhance supply chain efficiency and reduce costs in the pharmaceutical industry. In this regard, the supplier relationship management facets that influence the effective and efficient supply chain management are studied in the current study. Moreover, it extends supplier relationship management theory by confirming the multi-dimensional nature of the supplier relationship management constructs and empirically proving the different effects of these dimensions on supply chain performance. Since the study is done on the pharmaceutical industry, there are some implicational suggestions about this field. The greatest path coefficient is between the main constructs of the proposed model that is supplier relationship management which effective and how it generally affects its corresponding supply chain performance. Considering the economic situation, these finding is a confirmation of the necessity of cost reduction strategies, improved quality products, improved delivery performance and flexibility of supply chains.

5.2 Summary of the findings

In general, the study's overarching goal was to investigate the influence of supplier relationship management on the supply chain performance of pharmaceuticals firms in

Zimbabwe. The research hence found a strong relationship between supplier relationship management practices and supply chain performance measurement factors (cost savings, quality enhancement, delivery performance and supply chain flexibility), so it is worth highlighting that successful pharmaceutical organisations are implementing supplier relationship management.

5.3 Conclusion

Furthermore, the study concluded that pharmaceutical firms in Zimbabwe are on the edge of engaging in supplier partnerships and early supplier involvement in areas such as new product development and distribution of such products. According to the study findings, pharmaceutical firms in Zimbabwe had adopted supplier segmentation, collaboration and information exchange for effective performance. The study also concluded that effective communication, joint product development, forecasting, and joint problem solving are essential components of supplier relations as they yield a positive impact on supply chains of pharmaceutical firms. In summation, the research concluded that supplier segmentation, supply collaboration and information exchange have greatly impacted pharmaceutical industry supply chain as most of firms are now jostling for strategic partnerships at the expense of transactional supplier relationship as the former yields more tangible results.

5.4 Theoretical and Practical Contribution

Overall, this research contributes to the knowledge of the role of effective supply chain management and its impact on supply chain performance. To begin with, it suggested a theoretical framework that recognized efficient supplier relationship management, the factors that influence implementation of effective supplier relationship management and their effect on supply chain's performance. Secondly, the research prepared an empirical and valuable tool for supply chain managers to be used to analyse and evaluate supply chain performance. For example, the factors that determine performance (that is, cost saving, improved quality, delivery performance and flexibility) can be used to evaluate the supply chain performance in pharmaceutical industry. Thirdly, the study provides perceptual and prescriptive literature regarding supplier relationship management and its impact on supply chain performance. Lastly but not least, the results provide support to the assertion that management of supply chain relationships contributes positively to higher levels of supply chain performance.

5.5 Recommendations of the study

Accordingly, the study recommends that pharmaceutical firms should identify, select, and implement appropriate supplier relationship approaches in order to improve their supply chain performance. To improve performance, pharmaceutical companies should identify, select and implement appropriate supplier segmentation approaches, according to the study. Managers in particular should train their employees in the matrix, geographic, and pyramid approaches to supplier segmentation. Vendor segmentation reduces the number of strategies that a company must employ by creating a manageable number of supplier segments. This will assist organisations in maintaining and improving their market position, resulting in improved performance.

Furthermore, the study recommends that pharmaceutical companies improve their flow of information in order to meet the expectations of their customers. Principally, managers should encourage their partners and personnel to involve with vendors in order to stay ahead of competitors in markets due to improved understanding of customer requirements. Similarly, the study suggests that firms improve their information flow in order to achieve better inventory visibility and shipment planning.

According to the study, companies should improve their supplier collaboration. As a result, managers in pharmaceutical companies should devise resource-sharing strategies. The enhancement of resource sharing plans will continuously boost their partnerships with various supply chain partners in order to improve supply chain operations and, ultimately, increase customer satisfaction. Similarly, this study recommends that firms take part in crossborder collaborative efforts as soon as possible in order to keep up with their renowned international contemporaries.

5.6 Limitations of the research study

There are several limitations regarding this study. First, a questionnaire was used as the main tool for collecting data due to long spatial distance between Bindura and Harare (the city where most pharmaceutical firms are located in), and it was not possible to ask open questions and have an interview with the respondents. Secondly, according to obtained value for $R2$ (= 0.652), research model may not capture all the aspects of the supplier relationship management. Thus, it is suggested to future researches to capture other effective factors on supplier relationship management for effective supply chain performance and also, run the

research model in other industries that require more efficiency and effectiveness in their supply chain performance. Lastly, as the findings of this study were limited to pharmaceutical industries in Zimbabwe, it is suggested for future researchers to accomplish a comparative research between pharmaceutical firms in different countries both at regional and international scale.

5.7 Areas for further research study

The study recommends future studies should be conducted in other referral industries like hotel industry to further explore on supplier relationship management and its influence on performance of supply chains. Future studies should also incorporate both longitudinal and cross-sectional studies to confirm these findings. Equally important, future research studies should also exploit the influence of other variables other than supplier segmentation, supplier collaboration and information sharing. This is done to establish other supplier relationship management practices that influence performance of supply chains.

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APPENDICES

FACULTY OF COMMERCE

DEPARTMENT OF ECONOMICS

APPENDIX 1: QUESTIONNAIRE

RESEARCH TOPIC

AN INVESTIGATION ON THE IMPACT OF SUPPLIER RELATIONSHIP MANAGEMENT ON SUPPLY CHAIN PERFORMANCE OF PHARMACEUTICAL INDUSTRY IN ZIMBABWE. A CASE STUDY OF SELECTED PHARMACEUTICALS IN HARARE.

RESEARCH PROJECT

BY

MANDIVAVA ADMIRE J (B1025303)

Dear Respondent

I am a Masters student at Bindura University of Science Education researching on the impact of supplier relationship management on supply chain performance of pharmaceutical industry in Zimbabwe. A case study of selected pharmaceuticals firms in Harare. This questionnaire is designed to assess your opinion and experiences with the Pharmaceutical industry. Please, note that all information you provide will be treated as confidential and aggregated with other responses to identify themes emerging for the research and that the participant and their organization's names will not appear in the thesis. Completing this questionnaire is entirely voluntary. However, your time and cooperation regarding this survey will be greatly appreciated and will provide valuable information in the public procurement system. Please do not hesitate to contact me or the supervisors regarding any questions or issues that you are not clear about, use (0779 748 275) to contact Admire J Mandivava.

INSTRUCTIONS: 0779 748 275

Please answer all the questions to the best of your ability. Kindly indicate your answers by ticking where appropriate in the boxes and writing in the spaces provided. Your name or identity is not required.

SECTION A: Demographic Data

1. State whether your organisation is national or international

National	36
International	06

2. For how long have you been employed by the firm you are currently working on?

Less than 2yrs	06
3≤ years ≤5	11
6≤ years≤10	13
Years ≥11	12

3. How often does your organisation offer training/retraining to its employees?

Never	05
Annually	11
Quarterly	06
Monthly	03
Whenever there is need	21

SECTION B

In your opinion, please indicate the level of your agreement or disagreement using a tick on the following statements

1=strongly disagree 2=Disagree 3= Neutral 4= Agree 5= Strongly Agree

COST		1	2	3	4	5
Q1	Our firm segment our supply base based on the supply					

	risk exposure and criticality of items					
Q2	We have reduced on organisational spend by segmenting our supply base					
Q3	Information exchange has brought a considerable improvements in the pace of inventory movement					
Q4	Supplier induced disruptions have reduced through partnerships					
Q5	Our organization has improved in resource optimization through segmentation					

SECTION C

Please indicate the level of your agreement or disagreement using a tick on the following statements

Strongly disagree [1] Disagree [2] Neutral [3] Agree [4] Strongly agree [5]

	Quality improvement	**1**	**2**	**3**	**4**	**5**
Q1	Through information exchange our firm meet expected standards and have less rejection or returns					
Q2	We have improved product performance through data sharing and onsite assistance					
Q3	Collaboration has increased supplier commitment to transportation and storage of temperature sensitive products					
Q4	Our firm has realized enhanced innovation due to sharing of ideas and joint problem solving					
Q 5	Our firm has innovatively developed high quality products through supplier collaboration					

SECTION D

Please indicate the level of your agreement or disagreement using tick on the following statements

Strongly disagree [1] Disagree [2] Neutral [3] Agree [4] Strongly agree [5]

	Delivery performance	**1**	**2**	**3**	**4**	**5**
Q1	Our firm has improved its product packaging through cooperation					
Q2	Supply Chain transactions have been delivered at the right time, cost and as per the contract through collaborative execution.					
Q3	Our vendors or suppliers have reduced lead times for replenishment of critical medical supplies.					
Q4	Our firm has had minimal stock outs due to collaborating with suppliers in inventory management					
Q5	Our company has an outstanding on-time delivery record to our major customers through data sharing					

SECTION E

Please indicate the level of your agreement or disagreement using tick on the following statements

Strongly disagree [1] Disagree [2] Neutral [3] Agree [4] Strongly agree [5]

	Flexibility	**1**	**2**	**3**	**4**	**5**
Q1	Our firm share forecasted demand data in real time with our suppliers					
Q2	Our response to ever changing client demands has improved due to supplier cooperation					

Q3	Our firm's resilience (ability to adapt to future shocks and impending risks) has increased through effective communication and cooperation with suppliers					
Q4	Communication and collaborative planning have increased flexibility and responsiveness to customer requirements					
Q5	Our firm has maintained its established high service levels during the pandemic and other disease outbreaks like cholera through communication					

Thank you for your cooperation