

**THE IMPACT OF SUPPLY CHAIN MANAGEMENT PRACTICES ON
PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES.**

A CASE OF AGRO-DEALERS IN LUSAKA

BY

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DECLARATION

I, Mubanga Josephine Chileshe do hereby declare that this dissertation is my own original work and has not been submitted to any other college, institution or university other than the University of Zambia.

Signature:

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APPROVAL

This dissertation, by Mubanga Josephine Chileshe has been approved as partial fulfilment of the requirements for the award of Master of Science in Operations, Projects and Supply Chain Management by the University of Zambia.

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To my friends and family who consistently checked in with me and helped keep me focus on getting to the end, I would not have done this without you.

DEDICATION

This research is dedicated to my dad, Daniel Mushili Chileshe, who died on July 5, 2020.
Forever in my heart, never forgotten.

ABSTRACT

The Agro sector has evolved over the years becoming one of the key sectors in Zambia. This study sought to establish the impact of supply chain management practices on the performance and competitive advantage of Small and Medium Enterprises (SMEs) in the Agro sector with a focus on Lusaka. The study utilized a quantitative paradigm. The population of interest included all small and medium agro dealers in Lusaka registered with Patents and Companies Regulatory Act (PACRA) as of April 2020. Questionnaires were used to collect primary data from the SMEs. A total of 245 SMEs in the agro- sector were found to be registered with PACRA. A sample size of 171 was determined using the Yamane formula, questionnaires were distributed and 151 were returned. Linear Regression was used to analyze the results from the questionnaires. From the literature review, the most important dimensions that capture SCM practices construct have been chosen, which are: strategic supplier relationships, customer relationships, quality of information sharing, level of information sharing, and which variables were significant using the 95% significance. The researcher employed multiple linear regression and Pearson to determine. From the results obtained using regression analysis, it was shown that implementation of SCM practices resulted in increased performance of the SMEs in the agro sector.

Keywords: Supply Chain Management Practices, Agro-Sector, Small and Medium enterprises

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LIST OF ABBREVIATION AND ACRONYMS

SME	Small and Media Enterprises
SCM	Supply Chain Management
SCMP	Supply Chain Management Practices
PACRA	Patent and Company Registration Agency

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter presents the background to the study and helps to explain why the implementation of supply chain management practices is important for SMEs and the impact it has on performance and competitive advantage. It begins with an overview of the supply chain and the changes that have occurred in the area of supply chain in the last decade. The main objective of the study is to determine the impact of supply chain management practices on performance of Small and Medium Enterprises in the Agro sector.

1.2 Background

The last decade has seen the redefining of SCM by most institutions and organisations. It has moved away from being looked at as a management process to a management philosophy. Most organisations have begun to recognise that Supply Chain Management (SCM) is the key to building sustainable competitive edge. Supply chains provide opportunities to create competitive advantage amongst organisations. The concept of supply chain has been considered from different points of view in the different bodies of literature. The main purpose of supply chain management is to be able to continuously evaluate the process from the very beginning all the way to the end user. It requires coordinated activities beginning with a customer order and ending when the goods are in the hand of the customer. To have the goods in the hands of a customer calls for a network of contributions from parties involved; retailers, wholesalers, distributors, manufacturers and raw material suppliers (Waskita,2000). For goods to move from the supplier to the agro dealer located in the various parts of the country, it is dependent on other parties and hence needs a reliable chain.

1.2.1 Supply Chain Management Practices

Production, inventory distribution and payment cycles are the core of supply chain management. Information technologies and information sharing among parties in the supply chain are crucial, therefore, for supply chain management to be considered successful, there are key success factors which are referred to as supply chain management practices (li et al, 2005).

Supply chain management practices are defined as a set of activities undertaken by an organisation to promote effective management of its supply chain. The practices are proposed

to be a multi-dimensional concept which includes upstream and downstream of the supply chain. This means that there must be instruments to measure its effectiveness. Li et al, 2005, developed a measure of instrument for SCMP. This instrument had six empirically validated dimensions which included strategic supplier partnership, customer relationship, information sharing, information quality, lean practices and postponement. Literature portrays supply chain management practices from a lot of perspectives with the common one being to improve organisation's performance. In reviewing and consolidating the literature, five distinctive dimensions including strategic supplier partnership, customer relationship, and level of information sharing, quality of information sharing are selected for measuring SCM practices.

The supply chain management constructs cover both the upstream (how the organisations deal with their suppliers) this is in terms of strategic supplier partnerships and downstream (how organisations deal with their customers), customer relationships and they also cover information flow across the supply chain, and this is in terms of the level of information sharing and the quality of information sharing. There are of course other constructs that an organisation can include and use, however for purposes of this research the four above are what have been included.

1.2.2. Strategic Supplier Relationships

This is defined as the long-term relationship between an organisation and its suppliers. Strategic partnerships with suppliers enable organisations to work more effectively with a few important suppliers who are willing to share responsibility for the success of their products. An effective supplier partnership can be critical component of a leading edge in supply chain.

1.2.3. Customer Relationship

This includes the entire collection of practices or strategies that are used to manage the following: customer complaints, building long-term relationships with customers and improving customer satisfaction. Maintaining close customer relationships allows an organisation to differentiate its product from competitors, sustain customer loyalty and extend value to its customers.

1.2.4. Level of Information Sharing

Information sharing has two aspects: quantity and quality. Both aspects are important for the practices of SCM and have been treated as independent constructs in the past SCM studies. Level (quantity aspect) of information sharing refers to the extent to which critical and proprietary information is communicated to one's supply chain partner. Supply partners who are able to exchange information regularly are able to work together. This is because they understand the needs of the customer and respond to changes quicker.

1.2.5. Quality of Information Sharing

This includes aspects such as the accuracy, timeliness, adequacy, and credibility of information exchanged. The success of a company's supply chain management depends on the accuracy and speed of the information provided by each business partner (Chong et al ,2009) Li et al (2006) defined information sharing in the supply chain as the extent to which vital and proprietary information is communicated to the company's supply chain partner.

Prior studies have measured organizational performance using both financial and market criteria, including return on investment (ROI), market share, profit margin on sales, the growth of ROI, the growth of sales, the growth of market share, and overall competitive position. In line with the above literature, the same items will be adopted to measure organizational performance in this study

1.2.6. Small and Medium Enterprises in Zambia

Small and medium enterprises (SMEs) are defined as organisations who are registered with the registrar of companies and have businesses whose investment does not exceed three hundred thousand kwacha and whose number of employees does not exceed 150. SMEs are very important for the development of the economy. This is through creation of employment, improving incomes for low earners and increasing the tax base. According to the Zambia Development Agency (ZDA) 2020 report, the Agro- sector had the highest positive contribution to GDP at 1.1 percent in the year 2020. The SMEs in Zambia continue to face growing competition amongst other businesses operating in the same market. This has resulted in the need for these businesses to differentiate themselves.

The development of Micro, Small, and Medium Enterprises (MSMEs) is viewed as one of the sustainable ways of reducing the levels of poverty and improving the quality of life of

households through wealth and job creation. The contribution of MSMEs to economic growth and sustainable development is now widely acknowledged. MSMEs are believed to deepen the manufacturing sector, foster competitiveness and help in achieving a more equitable distribution of the benefits of economic growth, thereby help in alleviating some of the problems associate

1.3 Statement of the Problem

The concept of supply chain is still new to SMEs but is being recognized as a strategy that can give competitive advantage among competitors. Competition among players in the market has resulted in the need to strategize their approach towards gaining competitive advantage. Suppliers and buyers are linked throughout the process from raw materials to the final product.

The implementation of Supply Chain Management Practices by SMEs in the agro sector in Zambia is based on the concept that an organization must manage its supply chain and promote its effective use (Li, et al 2005).

The research seeks to assess the impact that the implementation of supply chain management practices such as Strategic Supplier Relationships, Customer Relationship, Level of Information Sharing and Quality of Information Sharing will have on performance and attainment of competitive advantage by SMEs in the agro sector.

1.4 Aim of the Study

To determine the impact of supply chain management practices on performance of Small and Medium Enterprises (SMEs). The research is also aimed at understanding the relationship between supply chain management practices and competitive advantage of small and medium enterprises

1.5 Research Objectives

- I. To establish the impact of supply chain management practices on the performance of SMEs.
- I. To determine the influence of supply chain management practices on the level of competitive advantage
- II. To establish if higher levels of competitive advantage result in higher levels of performance.

1.6 Research Questions

- I. What are the major effects of implementation of supply chain management practices on performance of SMEs?
- I. What influence do supply chain management practices have on the level of competitive advantage
- II. Does higher level of competitive advantage result in higher levels of performance?

1.7 Significance of the Study

This research is aimed at adding to the body of knowledge in the area of supply chain management and specifically supply chain management practices in Zambia. A journal has been published in the Open Journal of Business Management, (Chileshe and Phiri, 2022). It is hoped that organizations from other sectors will benefit from this study as it will show how implementation of SCM practices impacts performance of an organizations

1.8 Scope of the study

The research is a case study on SMEs in the Agro sector in Lusaka province. The scope of the study was based on the information obtained from PACRA on the location of Agro dealers in Lusaka province.

1.9 Organization of the Dissertation

The dissertation is structured as follows:

Chapter one

This chapter gives a brief background to supply chain management and how it has evolved with time. It also defines Supply chain management practices giving a brief explanation on what they are and how they are implemented in the organisation. The research objectives, the hypothesis, research questions objectives and the significance of the study.

Chapter Two

This is the review of various literature written on Supply chain management practices and supply chain management. It also provides some literature on the business environment in Zambia through the done by different scholars on the subject matter, identifying findings and gaps.

Chapter Three

The conceptual framework is aimed at selecting the theories and concepts that will be used in this research. A model that will be used as a guide in the research has been developed and presented in this chapter. The proposed research method, hypothesis and ethical considerations are also covered.

Chapter Four

The research findings are presented in this chapter. The data collected is analysed and presented in the tables and graphs for interpretation.

1.10 Chapter Summary

This chapter has given a background and problem statement regarding effective communication and organizational performance. The aim of the study was highlighted followed the objectives were used to answer the research questions and lastly the significance of the study was given to define the beneficiaries of the study.

CHAPTER 2

LITERATURE REVIEW

1.1 Introduction

Over the last decade the concept of Supply Chain Management (SCM) has expanded and has become a key subject in operations management area. Therefore, a set of practices of SCM has been implemented worldwide often without having its real impact measured adequately. Thus, a significant set of recent research has sought to study the impact of these practices on business and operational performance. However, this task has been hampered by the diversity and lack of standardization of the nomenclature that characterize the SCM practices.

The Supply Chain Management (SCM) theme has been increasingly discussed and has been of great relevance over the last years, both in academic and business environments. Renowned periodicals in operations management, like the Journal of Operations Management and International Journal of Operations & Production Management, presented special editions about this subject between 2006 and 2008. Moreover, some studies revealed, for example, that the strong attention paid to supply chain management to the inbound logistics is a key subject not only in big companies, but small and medium scale enterprises as well especially in leading sectors of the area, such as automobile and electrical and electronic sectors. This procedure is capable of generating new competencies in productive processes and technologies, contributing to cost and time reduction during the development of new products (time-to-market) in the whole supply chain ((por exemplo, Pires, Carr e Pearson, 1998).

All in all, recent works (Bozarth, 2009); (Lawson et al, Martin e Patterson, 2009) have shown a clear interest in investigating the impact of SCM practices on business and operational performances. However, in spite of the successful application of studies about identification of associations between SCM practices and performance indicators, there was a great amount of practices used in these studies that show different nomenclatures. It results in a confused understanding of the fundamental concepts of the area. This fact reinforces the idea that SCM is a highly contemporary area in business management and that it is still in developing and, as a consequence, still lacking some systematization, as in its terminology (Pires, 2004).

2.2 Definition of Enterprises in the Medium, Small and Micro Enterprises Sector.

An enterprise is "an undertaking engaged in the manufacture or provision of services or any undertaking carrying on business in the field of manufacturing, construction and trading

services", as stated by the Small Enterprises Development (SED) Act of 1996 of the Government of the Republic of Zambia. This does not include mining or recovery of minerals; mining is not included because it falls under the Mines and Minerals Act of 1994.

Meanwhile, for purposes of this study the definition of Medium and Small Micro Enterprises (MSMEs) in Zambia follows business variables such as total fixed Investments, Sales Turnover, number of employees, and Legal status.

On this basis therefore, the following definitions will apply; A micro enterprise shall be any business enterprise registered with the Registrar of Companies whose; Total investment (excluding land and buildings) shall be up to Eighty Thousand Kwacha (K80, 000), annual turnover shall be up to One hundred and Fifty Thousand Kwacha (K150, 000); and employing up to ten (10) persons.

A small enterprise shall be any business enterprise registered with the Registrar of Companies and put in the following categories: total investment, excluding land and building (in the case of manufacturing and processing enterprises) shall be between Eighty Thousand and Two Hundred Thousand Kwacha (K80, 000 – K200, 000) in plant and machinery while in the case of trading and service providing enterprises shall be up to One Hundred and Fifty Thousand (K150, 000) Kwacha. The annual turnover shall be between One Hundred and Fifty Thousand and Two Hundred and Fifty Thousand (K151, 000- K300, 000) Kwacha; and employing between eleven and forty-nine (11- 50) persons.

A medium enterprise shall be any business enterprise larger than a small enterprise registered with the Registrar of companies whose: The total investment, excluding land and building (in the case of manufacturing and processing enterprises) shall be between Two Hundred Thousand and Five Hundred Thousand (K201, 000–K500, 000) Kwacha in plant and machinery and shall be (in the case of trading and service providing) between One Hundred and Fifty-One Thousand and three Hundred Thousand (K151, 000 – K300, 000) Kwacha; (ii) The annual turnover shall be between Three Hundred Thousand and eight Hundred Thousand (K300, 000 - K800, 000); and (iii) Employing between Fifty-One and One Hundred (51 -100) persons.

An informal enterprise shall be any business enterprise not registered with the Registrar of Companies whose total investments, excluding land and building, shall be up to Fifty Thousand (K50, 000) Kwacha; and employing less than Ten (10) persons. In order to qualify as micro, small or medium enterprise under the above-mentioned categories, the company

should meet the legal status and total investment criteria together with at least one other criterion. Having a standard SME definition makes gathering and analysing statistical information about businesses easier.

According to UNDP (2004), MSMEs had the highest capital employment ratio and were a source of income for a broader layer of the population. The development of MSMEs is a sustainable way of reducing the levels of poverty and improving the quality of life of households through wealth and job creation. The contribution of MSMEs to employment, growth, and sustainable development was a widely acknowledged fact.

2.3 Supply Chain Management and Performance Measurement

Beaumont (2005) states that the supply chain is an integrated process that evolves from transformation of raw material in final product to customer delivery, being divided in at least four levels namely; suppliers, producers, distributors and customers. On this viewpoint, (Pires, 2004) reports that the SCM is a wider view of the traditional material management, now comprehending the whole supply chain – suppliers and customers of several levels in a strategic and integrated way. Council of Logistics Management (CLM), 2000 defines SCM as the systemic, strategic coordination of the traditional business functions and tactics across these businesses functions within a particular organization and across businesses within the supply chain for the purposes of improving the long-term performance of the individual organizations and the supply chain as a whole. SCM has been defined to explicitly recognize the strategic nature of coordination between trading partners and to explain the dual purpose of SCM: to improve the performance of an individual organization, and to improve the performance of the whole supply chain. The goal of SCM is to integrate both information and material flows seamlessly across the supply chain as an effective competitive weapon (Childhouse P, Towill DR, 2003).

Carr e Pearson (1999) examined a structural model of strategic purchasing and its influence on supplier evaluation systems, buyer–supplier relationships, and firm’s financial performance in which SCM practices that were used were (a) Supplier evaluation systems; (b) Buyer–supplier relationships; (c) Strategic purchasing and Firm’s financial performance as a performance concept using 168 / Structural Equation Modelling. The supplier evaluation systems had a significant indirect relationship with financial performance, but it was not a significant direct relationship. The Strategic purchasing had a significant direct relationship with financial performance and a significant indirect relationship with financial performance.

(Das, 2001) Explicated the concept of purchasing integration and examined its relationships with purchasing practices and manufacturing performance. In which SCM practices that were used were (a) Buyer-supplier relationship development; (b) Supply base leveraging; (c) Supplier performance evaluation. (a) Manufacturing cost reduction (b) Quality performance; (c) New product introduction time reduction performance; (d) delivery performance; (e) customization responsiveness performance were the performance concepts which were used, and 322 / Structural Equation Modelling was used. Purchasing integration was found to moderate the relationship between purchasing practices and manufacturing performance. Increased investments in purchasing integration were observed to lead to higher performance returns from investments in purchasing practices.

Additionally, (Kim, 2002) Examined the effect of supply chain integration on the relationship between diversification and a firm's competitive performance in which (a) Company's integration with suppliers; (b) Internal integration across the supply chain; (c) Company's integration with customers; (d) international market diversification; (e) product diversification were the SCM practices that were used and Firm performance 623 / Regression analysis was used. By comparing the main and interaction effects of SCI and diversification on performance, the paper shows that SCI strategy modifies the relationship between diversification and performance. Additionally, it is argued that coordinated use of SCI and diversification strategies has a significant effect on firm performance.

Considering the complexity of activities in the SCM, studies of the area have been analysing the relation among its several practices, the integration levels and the performance of companies involved in a supply chain. (Frohlich and Westbrook , 2001), for instance, reviewing the chain upstream and downstream, measured the integration level taking the following practices into consideration: production planning sharing, combined utilization of electronic data interchange, knowledge level and inventory mix levels, packaging customization, delivery frequency, shared use of containers, equipment and logistic services. Among the conclusions of the upper mentioned study, it was verified that the bigger the SCM integration level, the stronger the association with performance improvement. Nevertheless, the same study suggests future research could consider this integration level as part of the operation strategy, as the manufacture needs to be properly lined up with all the supply chain and not only within the company borders. Li et al. (2006), on the other hand, investigated the relation among five SCM practices (strategic partnership with suppliers, customer relationship, level of information sharing, information quality and postponement),

competitive advantage and organizational performance. The findings of the study highlight that the implementation of practices such as strategic leadership of suppliers, building a relationship with suppliers and postponement gave the organization a competitive advantage concerning cost, quality, reliability, flexibility and delivery.

Following the same research line, Fiennes, Voss et al. (2005) evaluated four dimensions of the relationship with suppliers (communication, commitment, cooperation and adaptation) and its impact on the operational performance in traditional competitive priorities (quality, costs, delivery and flexibility). The research results revealed that the dimensions of relationship are a successive phase that accumulates over time, as in the adaptation phase improvement on the quality of the product and production cost reduction are conducted, but there are no effects on the performance of delivery and flexibility indicators.

Martin and Patterson (2009) conducted a survey with 143 purchasing, logistics and material management managers. The research aimed to identify which performance measures the companies that adopted SCM practices were using to manage their first tiers. The results indicated that the practices positively affected inventory (raw material, final product and storage volume) and cycle time (inventory turnover, cycle time and order fulfilment) indicators. However, the financial performance was not significantly affected by the SCM practices adopted by the analysed companies.

Despite the success of studies on impact identification of the SCM practices over business and operational performance, it is possible to perceive a great diversity of practices adopted by the researchers with different nomenclatures, but with strong conceptual similarity, a fact that can result in a confused understanding of the concepts. It reinforces the findings that SCM is a highly contemporary area in business management that is still in developing and, therefore, still lacking some systematization, as in its terminology (Pires, 2004). In this context and aiming a standardization of the terms used in the analysed studies, a systematization of the literature was planned, as concepts presented in follows.

2.3.1 Buyer–Supplier Relationships

Buyer- supplier relationship on both parts (contractors and suppliers) implies a long-term relationship between a company and its suppliers and vice-versa. This relationship is destined to influence operational and strategic capabilities of organizations in order to help them achieve significant benefits. For this reason, there are joint investments in process

technology, product and human resources and the contractor company usually works with few suppliers that share responsibilities on the products success.

Fiennes et al. (2005; 2005a; 2005b) name this adaptation process, including variables that involve investments by the suppliers in specialized tools and equipment according to the client company products, variables that represent changes in the production system, according to the client company product requests. (al. P. e., 2006) Subdivided the mentioned concept in long-term relationship by relational integration, limited number of suppliers and long-term relationship. The authors highlight that the long-term relationship with a limited number of suppliers also means the participants share risks and benefits. On the other hand, (Narasimhan and Das, 2001) emphasize that the cooperative relationship between supplier and buyer is more interesting for buyer companies when shopping items are highly overriding, and the sources of suppliers are limited.

(FI., 1997) Defined supplier relations as the long-term relationship between the organization and its suppliers. It is designed to leverage the strategic and operational capabilities of individual participating organizations to help them achieve significant ongoing benefits. A strategic partnership emphasizes direct, long-term association and encourages mutual planning and problem-solving efforts (Gunasekaran A, Patel C, Tirtiroglu E., 2001). Such strategic partnerships are entered into to promote shared benefits among the parties and ongoing participation in one or more key strategic areas such as technology, products, and markets (Yoshino M, 1995). Strategic partnerships with suppliers enable organizations to work more effectively with a few important suppliers who are willing to share responsibility for the success of the products. Suppliers participating early in the product-design process can offer more cost-effective design choices, help select the best components and technologies, and help in design assessment (Tan KC, Lyman SB, Wisner JD, 2002). Strategically aligned organizations can work closely together and eliminate wasteful time and effort. An effective supplier partnership can be a critical component of a leading-edge supply chain (D, 1997).

2.3.2 Information sharing

Level of information sharing refers to the extent to which critical and proprietary information is communicated to one's supply chain. The information might be strategic or tactic, about logistic activities, about costumers and market, product availability, inventory levels, expeditions and production requirement status (Paulraj, Chen e Flynn, 2006).

The means used for information integration are derived from implantation of the following communication technologies or methods: Electronic Data Interchange - EDI, a group of integrated management in product development, information and work sharing with suppliers for the improvement on second layer supplier management, management systems like ERP (Enterprise Resource Planning)

Information sharing has two aspects: quantity and quality. Both aspects are important for the practices of SCM and have been treated as independent constructs in the past SCM studies (Monczka RM, Petersen KJ, Handfield RB, Ragatz G, 1998). Level (quantity aspect) of information sharing refers to the extent to which critical and proprietary information is communicated to one's supply chain partner (Monczka RM, Petersen KJ, Handfield RB, Ragatz G, 1998). Shared information can vary from strategic to tactical in nature and from information about logistics activities to general market and customer information (Mentzer JT, Min S, Zacharia ZG., 2000). Many researchers have suggested that the key to the seamless supply chain is making available undistorted and up-to-date marketing data at every node within the supply chain (Balsmeier PW, Voisin W, 1996), (DR, 1997), (JR, 1993). By taking the data available and sharing it with other parties within the supply chain, information can be used as a source of competitive advantage. (BJ, 1998) Considers sharing of information as one of five building blocks that characterize a solid supply chain relationship. According to Stein and Sweat (2008), supply chain partners who exchange information regularly are able to work as a single entity. Together, they can understand the needs of the end customer better and hence can respond to market change quicker. Moreover, Tompkins and (Tompkins J, 1999) consider the effective use of relevant and timely information by all functional elements within the supply chain as a key competitive and distinguishing factor. The empirical findings of (Childhouse P, Towill DR, 2003) reveal that simplified material flow, including streamlining and making highly visible all information flow throughout the chain, is the key to an integrated and effective supply chain. Quality of information sharing includes such aspects as the accuracy, timeliness, adequacy, and credibility of information exchanged. While information sharing is important, the significance of its impact on SCM depends on what information is shared, when and how it is shared, and with whom (Lee HL, Padmanabhan V, Whang S. t., 1997). Literature is replete with example of the dysfunctional effects of inaccurate/delayed information, as information moves along the supply chain (Balsmeier PW, Voisin W, 1996). Divergent interests and opportunistic behaviour of supply chain partners, and informational asymmetries across supply chain affect the quality of

information (Feldmann M, Müller S. s, 2003). It has been suggested that organizations will deliberately distort information that can potentially reach not only their competitors, but also their own suppliers and customers [(Mason-Jones R, Towill DR, 1997). It appears that there is a built-in reluctance within organizations to give away more than minimal information (Berry D, Towill DR, Wadsley N, 1994) since information disclosure is perceived as a loss of power. Given these predispositions, ensuring the quality of the shared information becomes a critical aspect of effective SCM. Organizations need to view their information as a strategic asset and ensure that it flows with minimum delay and distortion.

2.3.3 Postponement

Postponement is defined as the practice of moving forward one or more operations or activities (making, sourcing and delivering) to a much later point in the supply chain (BM., 1998). Two primary considerations in developing a postponement strategy are: (a) determining how many steps to postpone, and (b) determining which steps to postpone (BJ, 1998). Postponement allows an organization to be flexible in developing different versions of the product in order to meet changing customer needs, and to differentiate a product or to modify a demand function (Waller MA, Dabholkar PA, Gentry JJ, 2000). Keeping materials undifferentiated for as long as possible will increase an organization's flexibility in responding to changes in customer demand. In addition, an organization can reduce supply chain cost by keeping undifferentiated inventories (Van Hoek RI, Voss RI, Commandeur HR., 1999). Postponement needs to match the type of products, market demands of a company, and structure or constraints within the manufacturing and logistics system (Pagh JD, Cooper MC, 1998). In general, the adoption of postponement may be appropriate in the following conditions: innovative products (ML., 1997); products with high monetary density, high specialization and wide range; markets characterized by long delivery time, low delivery frequency and high demand uncertainty; and manufacturing or logistics systems with small economies of scales and no need for special knowledge (Pagh JD, Cooper MC, 1998)

2.3.4 Customer relations

Customer Relationship Management is a methodology that helps a business assess customer profiles, recognize its needs and potential areas of profitability and identify effective measures to achieve customer satisfaction, competitive advantage and therefore profitability (Woodcock, Foss & Stone, 2015). The market gives them multiple options from a consumer's point of view and increases their bargaining power. The marketing output of the undertaking is a function of complex variables. According to Karr (2017), steps are being taken

worldwide to improve its market performance. Karr (2017) States that these measures basically concern improved cost management practices, improved customer relations, improved product quality control, improved effective communication networks to expand target markets, informed and better pricing decisions. Various research concentrates mainly on whether customers stay loyal to and are pleased with their brand (Aydin, Özer & Arasil, 2015) And satisfaction is a critical component of retention. Another important aspect to be vigilant about is accessibility. This idea would be one of the precious ways of attracting new customers and maintaining good ties with them. The reasoning behind this idea is that station location takes advantage of customer desires. Connection convenience is therefore a key point in the customer retention paradigm, as connection convenience will result in high marketing results due to low switching costs. In this basis, it is crucial that successful customer relationship management is adopted to achieve a high marketing share, by analysing the customer relationship management surrogates and how they can impact marketing efficiency. Customer Relationships Management (or CRM) is a concept that describes how your business interacts with your clients. Many people think of CRM as a tool to gather client information. But this is just part of the scene. CRM means use technology to get information you need to provide better goods and services for your customers. In other words, CRM primarily deals with what you do with this expertise to better represent and define future needs of your current clients, contributing to higher income for you. Customer Relationship Management (CRM) emerges after revolution. Therefore, achieving the maximum potential of each customer, relationship should be the primary objective of every business. A disaffected customer causes business harm, as others are more likely to fail. And it's no wonder that CRM is an important subject of debate in the business world (Feinberg, 2018). Customers are critical drivers for business performance, but this has gained less publicity. The private firms, on the other hand, have pursued various strategies to draw clients. Some of the most important tasks for any company is to represent and maintain good relations with the King (customer). Customers used to be simple people, pleased with whatever product or service they've been provided. Marketing is no longer just about the manufacturing, selling and distribution of the products. It is increasingly concerned with creating and maintaining long-term customer relationships which are mutually fulfilling. Over a period of time, consumers have become well aware of their rights through competition and technological advances and the extended deal quickly becomes one that is anticipated. This increasing business environment is characterized by increased economic liberalization, high customer competition, well-informed and demanding customers who care about quality

and value purchases (Kotler, 2003). Most businesses are tasked with gradually gaining customers and taking constructive measures to retain the customers they have acquired in an effort to stay competitive in business. That also includes measures to preserve the relationship between the company and its customers.

According to (Ampoful, 2018) these measures are being taken for both offensive and defensive purposes. (Ampoful, 2018) Claims that Customer Relationship Management (CRM) is an aggressive tactic in which a (Adiele and Gabriel , 2013) company adopts it to raise sales while reducing operational costs. At the other hand, CRM may be used as a defensive strategy in which it is highly effective to be embraced by other close rivals, in which case it is applied to mitigate the negative effects of the same. In this case, it becomes clear that CRM is not a consideration that any player can disregard when formulating strategies and setting short- and long-term goals (Singh, 2011). This demonstrates that, from a national point of view, the use of CRM in the gas station is due to the increased marketing performance of the national gas station in advancing technology, however, argue that customer experiences are a large and fundamental factor that can dramatically affect the performance of gas stations and businesses in general. Throughout recent years, rising customer preferences have seen CRM as an unavoidable prerequisite for business success. There is a great deal of dependency between seller and buyer that consumers want their products and that businesses need technology to develop new innovations to attract and maintain more customers.

Customer relationship play an important role in enhancing organizational performance and competition advantage (Barney, 1991). Organization possesses the capabilities of customer interaction management and customer relationship upgrading usually had the superior financial performance (Krasnikov & Jayachandran, 2008)). So, customer relationship management capabilities and business performance had the positive relationship with each other. If customer relationship management capabilities enhanced, then business performance automatically increased. Outstanding customer relationship management capabilities leads to customer loyalty and superior competition advantage (G.S. Day, 2003). Customer relationship management capabilities capture customer pertaining needs at accurate time (JIT). Successful implementation of customer relationship management was increasing the business profit up to 270 percent (Ryals, 2005). It was also increasing the stock price (Fornell, Mithad, & Krwashnan, 2006)customer satisfaction and customer loyalty (Anderson, Fornell, & Mazvancheryl, 2004).

2.3.5 Competitive Advantage

Competitive advantage refers to the factors that allow a company to produce goods and services better or cheaper than its rivals. These factors allow the productive entity to generate more sales or superior margins compared to its rivals. Competitive advantages are attributed to variety of factors including cost structure, branding, the quality of product offerings, the distribution network, intellectual property and customer service. Competitive advantage is the extent to which an organization can create a defensible position over its competitors (McGinnis MA, Vallopra RM, 1999). It comprises capabilities that allow an organization to differentiate itself from its competitors and is an outcome of critical management decisions (Tracey M, Vonderembse MA, Lim JS., 1999). The empirical literature has been quite consistent in identifying price/cost, quality, delivery, and flexibility as important competitive capabilities. In addition, recent studies have included time-based competition as an important competitive priority. Research by Stalk (1998), Vesey (1991), (Handfield and Pannesi, 1995), Kessler and (Kessler E, Chakrabarti A, 1996) Zhang (2006) identifies time as the next source of competitive advantage. On the basis of prior literature, (Koufteros XA, Vonderembse MA, Doll WJ, 1997) describe a research framework for competitive capabilities and define the following five dimensions: competitive pricing, premium pricing, value-to-customer quality, dependable delivery, and production innovation. These dimensions are also described by (Tracey M, Vonderembse MA, Lim JS., 1999). Based on the above, the dimensions of the competitive advantage constructs used in this study are price/cost, quality, delivery dependability, product innovation, and time to market.

Competitive advantages generate greater value for a firm and its shareholders because of certain strengths or conditions. The more sustainable the competitive advantage, the more difficult it is for competitors to neutralize the advantage. The two main types of competitive advantages are comparative advantage and differential advantage. The term "competitive advantage" traditionally refers to the business world, but can also be applied to a country, organization, or even a person who is competing for something.

2.3.5.1 Competitive Advantage vs. Comparative Advantage

A firm's ability to produce a good or service more efficiently than its competitors, which leads to greater profit margins, creates a comparative advantage. Rational consumers will choose the cheaper of any two perfect substitutes offered. For example, a car owner will buy gasoline from a gas station that is K5 cheaper than other stations in the area. For imperfect

substitutes, like Pepsi versus Coke, higher margins for the lowest-cost producers can eventually bring superior returns. Economies of scale, efficient internal systems, and geographic location can also create a comparative advantage. Comparative advantage does not imply a better product or service, though. It only shows the firm can offer a product or service of the same value at a lower price. For example, a firm that manufactures a product in China may have lower labour costs than a company that manufactures in Zambia, so it can offer an equal product at a lower price. In the context of international trade economics, opportunity cost determines comparative advantages. Amazon (AMZN) is an example of a company focused on building and maintaining a comparative advantage. The e-commerce platform has a level of scale and efficiency that is difficult for retail competitors to replicate, allowing it to rise to prominence largely through price competition.

2.3.5.2 Competitive Advantage vs. Differential Advantage

A differential advantage is when a firm's products or services differ from its competitors' offerings and are seen as superior. Advanced technology, patent-protected products or processes, superior personnel, and strong brand identity are all drivers of differential advantage. These factors support wide margins and large market shares. Apple is famous for creating innovative products, such as the iPhone, and supporting its market leadership with savvy marketing campaigns to build an elite brand. Major drug companies can also market branded drugs at high price points because they are protected by patents.

Lasting competitive advantages tend to be things competitors cannot easily replicate or imitate. Warren Buffet calls sustainable competitive advantages economic moats, which businesses can figuratively dig around themselves to entrench competitive advantages. This can include strengthening one's brand, raising barriers to new entrants (such as through regulations), and the defense of intellectual property. Competitive advantages that accrue from economies of scale typically refer to supply-side advantages, such as the purchasing power of a large Agro dealers or retail chain. But advantages of scale also exist on the demand side—they are commonly referred to as network effects. This happens when a service becomes more valuable to all of its users as the service adds more users. The result can often be a winner-take-all dynamic in the industry. Comparative advantage mostly refers to international trade. It posits that a country should focus on what it can produce and export relatively the cheapest—thus if one country has a competitive advantage in producing both products A & B, it should only produce product A if it can do it better than B and import B from some other country.

2.3.6 Organizational Performance

Finding ideal concept for managing and measuring business performance is a complex problem and experts represented by consulting firms, business managers or academics has been leading various discussions about it. There is a conflict between the use of traditional indicators for measuring performance and modern indicators, based on value – management. Traditional approaches for measuring performance are mostly based on the primary company’s goal, which is considered as profit maximization and for its expression large number of indicators is used, but they are not always compatible with each other. Traditional financial indicators can show just overall results, but they don’t indicate in what area company should be better to accomplish its strategic goals. (Fibírová, 2005) Modern approaches to value – based management of the company are trying to connect all company’s activities together with people, who are involved in business process, using one criterion that resulted in the increased value of the invested capitals by company’s owners. Category of the economic profit is inserted into indicators, which takes into account also alternative costs of the capital. Alternative costs represent income from missed opportunity for business owners, from opportunity, which has been sacrificed and has the same risk as the studied company. The concept of value-based management represents system, strategies, processes, analytic technic and also company’s culture goals. Value management connects with effort to maximize the value that means trying to achieve maximum benefit for company’s owners in the form of sharing the profit. Traditional indicators for business performance include indicators of the absolute value of earnings, indicators of cash flow and profitability indicators. Indicators of earnings are the most common, they can be expressed by net income, earnings before taxes, earnings before interest and taxes and earnings before interests, taxes and depreciation. Indicators of cash flow give us information about cash income and expenses. For example, total cash flow, operating cash flow or free cash flow. The last group of indicators is profitability indicators that show profit and include return on sales, assets, invested capital, earnings per share. Traditional indicators have also their disadvantages which are given by that they are based on accounting data and especially on earnings. Inflation, risk, the time value of money and alternative cost are not considered. Critical findings are not only about earnings but also about problems with capital structure. The value of the profitability indicators should be compared with opportunity costs to be relevant. Financial analysis is an inseparable part of the company financial management. It evaluates the past and present economic development from different angles and creates condition for future decisions and plans. Results of the financial analysis provide valuable information not

only for internal users, but also for external users. Financial analysis is based on analysis of the financial statements, which are balance sheet, income statement and cash flow statement. All areas of business performance are being evaluated and we talk about debt analysis, analysis liquidity, profitability, activity and market value.

According to Martin (2010:67) performance is defined simply in terms of output terms such as quantified objectives or profitability. Performance has been the subject of extensive and increasing empirical and conceptual investigation in the small business literature (K.J., 2009). The issues that remain unresolved are the goals against which performance should be assessed and from whose perspective the goals should be established. (Abdelrahim, 2007) On their study defined performance as follows. The most adopted definition of success [good performance] is financial growth with adequate profits. Other definitions of success (good performance) are equally applicable. For example, some entrepreneurs regard success [good performance] as the job satisfaction they derive from achieving desired goals. However, financial growth due to increasing profits has been widely adopted by most researchers and practitioners in business performance models. Global Entrepreneurship Monitor (GEM) defined Performance as the act of performing; of doing something successfully; using knowledge as distinguished from merely possessing it (GEM, 2004:10). However, performance seems to be conceptualized, operationalized and measured in different ways thus, making cross-comparison is difficult (Srinivasan et al., 1994:22). Among the most frequently used operationalization are survival, growth in employees and profitability. A business enterprise could measure its performance using the financial and non-financial measures. The financial measures include profit before tax and turnover while the non-financial measures focus on issues pertaining to customers' satisfaction and customers' referral rates, delivery time, waiting time and employees' turnover. Recognizing the limitations of relying solely on either the financial or non-financial measures, owners-managers of the modern small business has adopted a hybrid approach of using both the financial and non-financial measures (H Gin Chong, 2008:13).

Organizational performance refers to how well an organization achieves its market-oriented goals as well as its financial goals (Yamin S, Gunasekruan A, Mavondo FT. s, 1999). The short-term objectives of SCM are primarily to increase productivity and reduce inventory and cycle time, while long-term objectives are to increase market share and profits for all members of the supply chain. Financial metrics have served as a tool for comparing organizations and evaluating an organization's behaviour over time (S, 2000). Any

organizational initiative, including supply chain management, should ultimately lead to enhanced organizational performance. A number of prior studies have measured organizational performance using both financial and market criteria, including return on investment (ROI), market share, profit margin on sales, the growth of ROI, the growth of sales, the growth of market share, and overall competitive position (Vickery S, Calantone R, Droge C. , 1999). In line with the above literature, the same items will be adopted to measure organizational performance in this study.

2.4 Theoretical Basis: Supply Chain Management and Performance Measurement

During 1950s and 1960s the concept of SCM was unknown, and in this period, new product development was slow and counted only in the firm own technology and capacity. Inventory cushioned bottleneck operations in order to maintain a balanced line low, resulting in huge investment in work in process (WIP) inventory (Tan, 2001). Furthermore, issues concern with purchasing was neglected by managers at that time, since purchasing was considered as a service to production (Famer, 1997). Increasing production was the main objective of this period; little emphasis was on cooperative and strategic buyer supplier partnership. According to Tan (2001), sharing technology and expertise with customers or suppliers was considered too risky and unacceptable.

Tan (2001) argues that, in the 1970s, managers became aware of the huge WIP on manufacturing cost, new product development, quality, and delivery time. One of the factors of this increased awareness was the introduction of Manufacturing Resource Planning (MRP). The focus in this period changed; it was not just increase production through spreading the fixed cost to a bigger output (economies of scale), rather, to increase performance. The introduction of IT (MRP) in planning the resources of the firm proofs this.

During the 1980s and early 1990s, firms dealt with increased demands for “better, faster, cheaper logistical service”. As a result, many manufacturers outsourced logistics activities and their focus transferred to core competencies (Daugherty, 2011). According to Daugherty (2011), the outside specialist presented an economically viable means of achieving productivity and efficiency. Therefore, many manufactures went more for a relationship – oriented approach with their supplier and customer. They understood the benefits of cooperative relationship with the other firms in the different chain levels (Stank et al, 1999). Stank et al (1999), show in their paper some of the advantages and benefits that this cooperative relationship had: synergy gain through shared expertise and resources, better planning and support, exchange of information, and joint problem solving. Another reason

that influenced the partnership between supplier – buyer was the increased global competition (Tan, 2001).

The introduction of Enterprise Resource Planning (ERP) in the 1990s, gave a boost to the evolution of the SCM and buyer - supplier relationship. Movahedi et al (2009) argues, while EDI - Electronic Data Interchange systems were concerned mainly with inter – organizational integration, ERP systems were concern mainly with intra - organizational integration. The evolution continues in the 21st century with the development of more sophisticated IT systems (internet - based solution systems), which are concerned for both inter-organizational integration and intra-organizational integration. Moreover, the relationship buyer – supplier in this period have gone one-step forward, from normal partnership to long-term relationship and strategic alliances. Manufacturers and retailers now commonly exploit supplier strengths and technology in support of new product development, distribution channels, cost reduction etc. (Morgan and Monczka, 1995).

The latest trend of evolution in the SCM is the movement towards systems of supplier relations over national boundaries and into other continents (Movahedi et al, 2009). GSCM is the latest concept introduced to the literature of SCM. Firms are much bigger than they used to be. They have achieved economies of scale and with the establishment of trade liberalisation policies they are internationalizing their businesses to find the lowest sources of inputs and growing markets to sell their products. The concept of SCM is not enough for being efficient and competitive in the new environment that is why new concept and management strategies (i.e. GSCM) are emerging. An integrated supply chain gives considerable competitive advantage to the individual actors participating in the chain. In the developed economies, there is a switch from firm – firm competition to chain – chain competition (Koh et al, 2007; Lummus et al, 1998, Morgan and Monczka, 1996, Anderson and Katz, 1998).

Some authors have segmented the evolution of supply chain management into stages (Movahedi et al, 2009; Ballou, 2007). Movahedi et al, (2009) segmented SCM evolution into three stages: i. Creation era, starts (1980s) when the buyer – supplier understood the benefits that a cooperative relationship offers. In this period, we encounter for the first time the term SCM.

ii. Integration era, starts (1990s), the IT systems (ERP, EDI etc.,) are introduced. These systems focus not only in managing the resources of the individual firm but also the resources of the integrated supply chain.

iii. Globalization era starts with the creation of the trade liberalization policies and the establishment of institution such as World Trade Organization (WTO) and other international institutions that deal with global/regional trade policies.

According to Ballou (2007) SCM is not new; it is an evolution of purchasing and distribution function. The integration of these two functions has generated what we call SCM. Figure 1 shows the evolution of SCM as described by Ballou (2007). He has segmented the evolution of SCM into three stages: activity fragmentation – 1950s and 1960s, activity integration – 1960s to 2000, Supply chain management – 2000 and beyond.

Beaumont (2005) states that the supply chain is an integrated process that involves from transformation of raw material in final product to customer delivery, being divided in at least four levels – suppliers, producers, distributors and customers. On this viewpoint, Pires (2004) reports that the SCM is a wider view of the traditional material management, now comprehending the whole supply chain – suppliers and customers of several levels – in a strategic and integrated way.

2.5 Supply Chain Management Evolution

Considering the complexity of activities in the SCM, studies of the area have been analysing the relation among its several practices, the integration levels and the performance of companies involved in a supply chain. (Frohlich and Westbrook , 2001) For instance, reviewing the chain upstream and downstream, measured the integration level taking the following practices into consideration: production planning sharing, combined utilization of electronic data interchange, knowledge level and inventory mix levels, packaging customization, delivery frequency, shared use of containers, equipment and logistic services. Among the conclusions of the upper mentioned study, it was verified that the bigger the SCM integration level, the stronger the association with performance improvement. Nevertheless, the same study suggests future research could consider this integration level as part of the operation strategy, as the manufacture needs to be properly lined up with all the supply chain and not only within the company borders.

Li *et al.* (2006), on the other hand, investigated the relation among five SCM practices (strategic partnership with suppliers, customer relationship, level of information sharing,

information quality and postponement), competitive advantage and organizational performance. The findings of the study highlight that the implementation of practices such as strategic leadership of suppliers, building a relationship with suppliers and postponement gave the organization a competitive advantage concerning cost, quality, reliability, flexibility and delivery.

Following the same research line, Fynes, Voss *et al.* (2005) evaluated four dimensions of the relationship with suppliers (communication, commitment, cooperation and adaptation) and its impact on the operational performance in traditional competitive priorities (quality, costs, delivery and flexibility). The research results revealed that the dimensions of relationship are a successive phase that accumulates over time, as in the adaptation phase improvement on the quality of the product and production cost reduction are conducted, but there are no effects on the performance of delivery and flexibility indicators.

Martin and Patterson (2009) conducted a survey with 143 purchasing, logistics and material management managers. The research aimed to identify which performance measures the companies that adopted SCM practices were using to manage their first tiers. The results indicated that the practices positively affected inventory (raw material, final product and storage volume) and cycle time (inventory turnover, cycle time and order fulfilment) indicators. However, the financial performance was not significantly affected by the SCM practices adopted by the analysed companies.

(Moberg CR, Cutler BD, Gross A, Speh TW, 2002) Identified the antecedents of information exchange within supply chains. Their results indicated that although information exchange among trading partners is consistently mentioned as a key requirement of successful supply chain management implementation.

2.6 Challenges in Implementation of Supply Chain Management Practices

Tan KC, Lyman SB, Wisner JD in 2002 surveyed senior managers in various industry to study the prevalent supply chain management and supplier evaluation practices. The study reduced these practices to a smaller set of constructs and related the constructs to firm performance. The study showed that some constructs were found to adversely affect the performance.

Croom S, Romano P, Giannakis M in 2000 carried out some works to contribute to a better understanding of the research conducted in SCM at a multi-disciplinary level. They conducted a content analysis of the most significant scientific literature about marketing,

logistics management and marketing channels published over 1997-2006. As a result, a data base of 414 papers from 14 journals was created. This work revealed that the level of development of the main lines of research into SCM and makes it possible to detect the topics that require greater attention, and which may be object of future studies conducted by academics.

Gorane and Kant (2015) carried out research on Performance of supply chain to find out the most critical barriers to Supply chain. By interactive structural modelling and MICMAC analysis it is found that lack of top management commitment and support and unclear organization objective is most critical among other barriers. They found that all barriers are affecting on implementation of supply chain to some extents. Effect on operational and financial performance of organization. Organization with weak top management support results in unclear organization goal.

Luthra and haleem (2015) found that Lack of legislative framework, Political instability, Unawareness among society about social practices, Lack of customer support, Top management commitment inadequacy, financial checks, Lack of knowledge among SC members, Lack of trust among SC members Technical obstructions were barriers for implementing SCM practices. By stick rule about framework help for business environment to adopt SSCM, Technical complexity and non-availability of machinery and equipment for adopting sustainable SCM were found to be most critical.

V. Ravi (2014) carried out some works on SCM in electronics industry they found out that Lack of system and tool, Short-term decision-making perspectives, Organizational structures inhibiting cross-functional Interaction, Lack of commitment from top management, Lack of awareness about environmental and other sustainability issues, A focus on the company's own impacts, Financial Constraints, Lack of R&D, Lack of green products 1Lack of proper disposal of products and Various system and tools are needed for Eco efficiency □ Lack of system and tool are barrier for eco efficiency. Managers take short term objective at cost of long-term objective. So, underestimation of long-term being barrier for eco efficiency.

Wickramasinghe and Gamage (2011) carried out a study to improve high involvement work practice, Improvement in quality that can be measured by reduction in customer complain, increase number of customers, decrease in scrap and rework percentage.

Ou et al. (2010) identified a barrier which is related to organizations' financial performance, a barrier which positively increases customer satisfaction and positive customer satisfaction also has an effect on internal environments of the organization.

Tai and Ho. (2010) carried out research on Customer relationship in supply chain to find out barriers on SCM related to information sharing. He found that unwillingness to share information among supply chain partners, Information sharing directly influences customer relationship. The Developed model indicates that information sharing with different customers displays different opinions which help firms to produce right competitive products.

Other studies looked at SSCM through a risk management approach. Giannakis and Papadopoulos (2015) surveyed 600 supply chain managers from French and UK companies and found that endogenous environmental and social risks are highly interconnected with financial performance. They argue for a more integrated risk management strategy because of the large differences between sustainability and typical supply chain management risks. According to the authors, sustainability-related risks "...consider consequences on the natural ecosystem, corporate reputation, financial exposure, as well as compliance with laws, rather than [just] disruptions in supply chain operations."

(Giannakis and Papadopoulos, 2015) Lam and Quinn (2014) argue that sustainability and SSCM need to be incorporated into firms' Enterprise Risk Management programs because they argue that typical ERM systems are often siloed and cannot uncover all sustainability opportunities and risks because sustainability risks often fall outside typical business units. Hofman et al. (2014) describe how external stakeholders are the factor that separates SSCM risks from traditional supply chain risks. Whereas a typical supply chain risk is the possibility of a negative variation from an expected outcome that results in a negative consequence, a SSCM risk is often brought on by a supply chain disruption or an external stakeholder uncovering an issue and determining it unacceptable. Therefore, typical risk management processes can miss sustainability issues and stakeholder identification, mapping, translation, and management need to be incorporated into traditional risk management approaches.

Kim et al. (2014) took an econometric approach to compare the supply chain surplus of conventional and sustainable supply chains. They found that the overall surplus in a sustainable supply chain is greater than a conventional supply chain because firms will produce at the social equilibrium instead of the market equilibrium. The market equilibrium

would prompt firms to have an oversupply, which leads to higher inventory costs and poorer environmental performance.

Bendul et al. (2016) outline how SSCM can enable multinational firms to enter Base of the Pyramid (BOP) markets. Through case studies of 18 companies in China, India, and Ghana, the authors find that companies need to develop simpler and more localized supply chains to access these markets. These models can incorporate more local actors and consumers which builds the community's capacity to build the product and help educate consumers on the benefits of the product. Using a modified SCOR framework, the authors divide the supply chain into three management processes: plant and source, make, and deliver. They find that the companies that have most successfully accessed these markets in India, China, and Ghana have localized these three processes. Moreover, they argue that these processes can have a larger impact on producers and consumers in the communities than supplier training or certification programs. This paper puts forward alternative arguments to new market entry and economic development.

Geng et al. (2017) find a positive relationship between Green Supply Chain Management (GSCM) and economic, operational, and environmental performance for manufacturing firms in Asian Emerging Economies. The authors separated GSCM into 5 parts and determined that a firm exhibited GSCM if there was proof that they practiced at least one of these parts. The 5 parts are intra-organizational environmental management, product eco-design, green supplier integration, green customer cooperation, and reverse logistics. They found that intra-organizational environmental management practices, green customer cooperation, and green supplier integration were most strongly associated with economic performance while eco-design was most associated with operational performance.

Esfahbodi et al. (2016) produce different findings in their study on the effects of SSCM on the environmental and cost performance on 128 manufacturing firms, 72 located in China and 56 in Iran. SSCM adoption in both countries led to improved environmental performance but limited and insignificant cost performance. The authors evaluated SSCM based on sustainable procurement, sustainable distribution, sustainable production, and reverse logistics/investment recovery and found that only sustainable procurement in China had a positive and significant impact on cost. However, the authors note that sustainability movements in each country are nascent and believe that future government regulations and incentives will start to improve the cost performance of SSCM.

Zhang et al. (2014) use Life Cycle Assessment and other supply chain optimization tools to examine the relationship between total costs, GHG emissions, and lead time in the supply chain of a Dow Chemical company with 17 raw materials producers, 7 plants, and 268 customer regions. The authors used these three metrics to see the financial and operational impacts of improving environmental performance. Using the decision variables of raw materials purchasing, supplier selection and distribution, order allocation, and the overall material flow, the authors found strategies that minimized each objective function. There is a clear trade-off for each minimization. For example, the minimum GHG solution has a total cost 30% higher than the minimum cost solution. Despite the higher cost, this strategy had 10% lower GHG emissions than the minimum cost solution. It is likely that the supply chain managers use a hybrid strategy based on these three objectives, but it is interesting to note the cost and production effects of reducing GHG emissions.

Surroca et al. (2010) argue that the relationship between SSCM and corporate financial performance is mediated by certain intangible resources that can operate in both causal directions and create a virtuous circle. Based on regression analysis of 600 companies from the Sustainable database, they find that innovation resources, human capital performance, reputation, and firm culture are the four main intangibles. For example, high SSCM performance attracts top talent and increases employee retention, which lowers human capital costs.

Kashmanian (2015) builds on these findings and argues that SSCM is a pyramid with basic compliance using audits being the foundation, and supplier partnership and capacity building programs being the walls and roof. Supplier partnership and capacity building programs have the best chance of creating a competitive advantage and shared value. The author argues that audits can help map out suppliers, mitigate business risks and expose inefficiencies, but are insufficient in motivating better performing suppliers and enhancing market access. Klassen and Vereecke (2012) publish similar findings, arguing that auditing is necessary but insufficient. Based on interviews with supply chain and sustainability managers at multinational firms from a variety of industries, the authors find that firms have generally developed their auditing strategies due to regulation or NGO pressures.

Ahi and Searcy (2015) examine the increasing number of unique metrics that firms use to evaluate the social and environmental performance of their suppliers. They argue that this number can lead to confusion and manipulation and inhibits significant progress. Based on 445 peer-reviewed articles and corporate sustainability reports, they identified 2,555 unique

metrics, 93% of which were used fewer than four times and only 0.2% of which were used more than 20 times. This overwhelming number of metrics can lead to audit fatigue for suppliers, who often have different audit standards for each buyer. It also inhibits focus on improving economic, social, and environmental performance.

Carter and Jennings (2002) find that there is a link between buyer-supplier relationships based on social responsibility and increased operational performance. Based on interviews with 200 purchasing managers from consumer goods firms, the authors argue that purchasing managers who are involved in socially responsible activities are more likely to develop strong relationships with suppliers with the same values. These common values improve trust, encourage collaboration, and decrease the possibility of opportunistic behaviour. They also had direct, tangible, and positive effects on supplier quality, lead times, and efficiency.

Longoni et al. (2013) examines the relationship between the adoption of lean practices and philosophies on the operational and health and safety performance in the supply chains of 10 Canadian based manufacturing and distribution firms. Training in lean manufacturing is a common example of supplier capacity building, as many previous studies have shown the link between lean and operational performance. However, lean manufacturing's effect on health and safety outcomes had not been as clear. The findings show that the adoption of the four crucial aspects of lean manufacturing (just-in time, quality management, total preventive maintenance and HR management practices encouraging cross-training) is positively associated with improved operational and health and safety performance. Operational performance is measured by profitability, growth, flexibility, and delivery. Health and safety performance is measured by injury rates and days lost to injury.

Locke et al. (2007A) has similar findings based on their experience in two Nike factories, one that used lean manufacturing and one that did not. The relationship between supplier integration and financial performance has been another common area of SSCM research. Wing-Yan et al. (2016) outline aspects of supplier integration that include the use of common IT systems, the development of long-term relationships, joint goal setting and continuous improvement, joint product development, production flexibility, joint quality control, and joint inventory management. Based on their analysis of the sustainability and financial reports of 90 Asian fashion companies between 2006 and 2010, Wing-Yan et al. (2016) find that increased supplier integration had a positive effect on net income, inventory turnover, and ROA. This effect was stronger during financial crises, most likely due to the flexibility associated with high levels of supplier integration. Lehoux et al. (2015) produce similar

findings in their study of the inter-firm relationships of five Canadian sawmills (suppliers) and one paper mill (buyer). The authors found that the sawmills collectively increased their profit by 44% through regular replenishment, vendor managed inventory, and collaborative planning, forecasting, and replenishment. Prior to integration, the suppliers were trying to minimize their own costs, which led to low profits and low quality. Integration with their competitors uncovered more efficiencies and made the supply chain more flexible. Laursen and

Anderson (2015) examines the relationship between supplier integration and new product development among Unilever strategic suppliers and found that suppliers produced innovative and environmentally sustainable products when they were forced to collaborate with each other.

Klassen and Vereecke (2012) argue that managing the social performance of suppliers through collaboration can lead to reduced risk, reduced costs, and increased chances for revenue growth and market development. Their interviews with sustainability and supply chain managers from leading multinational firms provided multiple methods for improving the social and financial performance of suppliers, such as financial incentives for adopting Codes of Conduct, process and management training, and creating social development programs in supplier communities. Smith (2008) look at the different kinds of European food supply chains and find that the development of strong supplier relationships can cut down monitoring and acquisition costs, increase smaller supplier capacity, and lead to valuable knowledge and technology transfers. These knowledge and technology transfers are particularly valuable for buyers and suppliers because buyers can benefit from higher quality products and suppliers can benefit from infrastructure upgrades. The author lists examples of technology transfers that Danone, Unilever, and other multi-national brands have used.

Sajjad et al. (2015) interviewed senior managers of sustainability and or supply chain management from four large New Zealand firms and find that stakeholder management, along with the importance of sustainability to top management and risk reduction, are the biggest motivators to the implementation of SSCM initiatives. The authors also report that economic benefits associated with sustainability were not seen as a major motivator, but it is important to note that economic performance and stakeholder management are closely related. They imply that these managers are worried about the negative economic consequences of poor sustainability performance versus the positive economic benefits of strong sustainability performance. Seuring and Muller (2008) also find that external pressure

and incentives from consumers and regulators are still the biggest triggers for companies to implement SSCM programs.

Fiennes et al. (2005; 2005a; 2005b) name this adaptation process, including variables that involve investments by the suppliers in specialized tools and equipment according to the client company products, variables that represent changes in the production system, according to the client company product requests. (al. P. e., 2006) Subdivided the mentioned concept in long-term relationship by relational integration, limited number of suppliers and long-term relationship. The authors highlight that the long-term relationship with a limited number of suppliers also means the participants share risks and benefits. On the other hand, (Narasimhan and Das, 2001) emphasize that the cooperative relationship between supplier and buyer is more interesting for buyer companies when shopping items are highly overriding, and the sources of suppliers are limited.

(FI., 1997) Defined supplier relations as the long-term relationship between the organization and its suppliers. It is designed to leverage the strategic and operational capabilities of individual participating organizations to help them achieve significant ongoing benefits. A strategic partnership emphasizes direct, long-term association and encourages mutual planning and problem-solving efforts (Gunasekaran A, Patel C, Tirtiroglu E., 2001). Such strategic partnerships are entered into to promote shared benefits among the parties and ongoing participation in one or more key strategic areas such as technology, products, and markets (Yoshino M, 1995). Strategic partnerships with suppliers enable organizations to work more effectively with a few important suppliers who are willing to share responsibility for the success of the products. Suppliers participating early in the product-design process can offer more cost-effective design choices, help select the best components and technologies, and help in design assessment (Tan KC, Lyman SB, Wisner JD, 2002). Strategically aligned organizations can work closely together and eliminate wasteful time and effort. An effective supplier partnership can be a critical component of a leading-edge supply chain (D, 1997).

2.7 Summary of Related Works and Gaps in Literature

Table 1: Related works and gaps in the current literature

Paper	Paper Objective	Findings and Gaps
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Carr e Pearson (2002)	It developments hypotheses concerning purchasing/supplier involvement, strategic purchasing and firm's financial performance.	Purchasing/supplier involvement has a positive impact on strategic purchasing, and strategic purchasing has a positive impact on firm's financial performance.
Kaynak (2002)	It investigates the relationships among JITP techniques and their relation to firm performance.	The finding that top management commitment to Just-in-time purchasing (JITP), is directly or indirectly related to other techniques of JITP underscores the importance of leadership in implementing change in organizations.
Narasimhan e Kim (2002)	It examines the effect of supply chain integration on the relationship between diversification and a firm's competitive performance	By comparing the main and interaction effects of SCI and diversification on performance, the paper shows that SCI strategy modifies the relationship between diversification and performance. Additionally, it is argued that coordinated use of SCI and diversification strategies has a significant effect on firm performance
Vickery <i>et al.</i> (2003)	It examines the performance implications of an integrated supply chain strategy, with customer service performance followed by financial performance as	The results showed positive direct relationships between (1) integrated information technologies and supply chain integration, (2) supply chain integration and customer service, and (3) customer service

	performance constructs.	and firm performance. The relationship of supply chain integration to financial performance was indirect, through customer service, i.e., customer service was found to fully (as opposed to partially) mediate the relationship between supply chain integration and firm performance for first tier suppliers in the automotive industry
Chen <i>et al.</i> (2004)	It argues that strategic purchasing can engender sustainable competitive advantage by enabling firms to: (a) foster close working relationships with a limited number of suppliers; (b) promote open communication among supply chain partners; and (c) develop long-term strategic relationship orientation to achieve mutual gains	The results provide robust support for the links between strategic purchasing, supply management, customer responsiveness, and financial performance of the buying firm
Tracey <i>et al.</i> (2004)	It tests the impact of supply-chain management (SCM) capabilities on business/s performance to determine to what degree customer oriented SCM issues	The results indicate significant positive relationships exist among three types of SCM capabilities (outside-in, inside-out, and spanning) and business performance (perceived customer

	influence competitive position and organizational performance	value, customer loyalty, market performance, and financial performance
Kannan e Tan (2005)	It empirically examines the extent to which just in time, supply chain management, and quality management are correlated, and how they impact business performance.	Results demonstrate that at both strategic and operational levels, linkages exist between how just in time, total quality management, and supply chain management are viewed by organizations as part of their operations strategy. Results also indicate that a commitment to quality and an understanding of supply chain dynamics have the greatest effect on performance
Lin <i>et al.</i> (2005)	It identifies through the use of empirical data collected from Taiwan and Hong Kong, the factors that influence supply chain quality management.	The data showed that Quality Management (QM) practices are significantly correlated with the supplier participation strategy, and this influences tangible business results, and customer satisfaction levels. The data also showed that QM practices are significantly correlated with the supplier selection strategy. The empirical results presented could be used to improve the management of supply chain networks in the economies studied.
Fynes, Voss <i>et al.</i> (2005)	The purpose of this paper is to investigate how the dynamics of supply chain	There was mixed support for the impact of SC relationship dynamics on manufacturing performance. Hypotheses in respect of cost and

	(SC) relationships impact on manufacturing performance	quality were supported but those in respect of flexibility and delivery were not.
Li <i>et al.</i> (2006)	It conceptualizes and develops five dimensions of SCM practice and tests the relationships between SCM practices, competitive advantage, and organizational performance.	The results indicate that higher levels of SCM practice can lead to enhanced competitive advantage and improved organizational performance. Also, competitive advantage can have a direct, positive impact on organizational performance.
Paulraj <i>et al.</i> (2006)	In this study, the effect of strategic purchasing on buyer performance are examined based on not only financial but also operational measures.	The results reveal that strategic purchasing can have a profound impact on supply chain performance for both buyer and supplier firms
Sengupta <i>et al.</i> (2006)	It compares the effect of traditional manufacturing-oriented supply chain strategies on the operational and financial performance of firms in both service and manufacturing sectors	The results highlight similarities and differences between the two sectors demonstrating that effective supply chain strategies in one sector may not be appropriate in the other sector. This suggests that practicing managers should identify appropriate benchmarks and competitive priorities before pursuing specific supply chain strategies. The insights provided by this research should help guide companies toward strategies that may positively affect their specific organization's operational and

		financial performance.
Carr e Kaynak (2007)	It extends understanding of supplier development theory by investigating the relationships among communication methods, information sharing within a firm, information sharing between firms, and support aimed at supplier development and the effects these relationships have on firm performance.	The main findings indicate that traditional communication methods, information sharing within a firm, and information sharing between firms, and supplier development are significant factors for improving a buyer's performance though their indirect and direct effects on firm performance vary
Krause <i>et al.</i> (2007)	It investigates the relationships between U.S. buying firms' supplier development efforts, commitment, social capital accumulation with key suppliers, and buying firm performance	Analysis of buying firms from the U.S. automotive and electronics industries provides support for the theory that buyer commitment and social capital accumulation with key suppliers can improve buying company performance. Moreover, the findings suggest that the relationships of structural and relational capital vary depending on the type of performance improvement considered
Narasimhan e Jayaram	It investigates the key causal linkages in supply chain management.	The results support the notion that an integrated supply chain involves aligning sourcing decisions to

(1998)		achieve manufacturing goals that are set to respond favorably to the needs of customers.
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Despite the studies described above, there are still several gaps in the current academic literature where research could greatly benefit our understanding the impacts of Supply Chain management practices. Researchers are in a unique position to develop and test innovative hypotheses in the Supply Chain Management Practices especially in small or medium businesses. Moreover, these findings can create real world impact for brands and the communities in which they operate as Small or micro businesses usually do not follow these practices. Below are some notable gaps:

Robustness of SSCM performance: Many of the studies use a binary variable to measure SCM. In other words, researchers have often classified a supply chain as sustainable in big industries especially electronic and manufacturing firms. Although more recent studies have begun to develop more robust measures for SSCM performance and taken a wider look at the entire supply chain, there is still room for improvement. A focus on the small scale business performance instead of large manufacturing firms. Despite the number of studies outlined in this report, there is a much larger pool of studies that are more focused on the relationship between SCM and social performance and less focused on the financial performance. Granted, these studies can be crucial to researchers and practitioners because it is important to know if these interventions are producing the intended results. However, it is also important to quantify the financial costs and benefits in order to help professionals make informed decisions that will be supported by their boards and stockholders.

Lack of on the ground studies in Africa. Of the studies reviewed, only two explored SCM in Africa. Most of the other studies either focused on supply chains wholly contained in developed countries or multinational brands whose supply chains were primarily located in Europe or developing countries. Granted, most major supply chains are multi-national and academics, governments, civil society, and the private sector.

Industry Gaps: Certain industries are more likely to adopt SCM practices than others. This is due to lack of knowledge. Therefore, SCM studies are more likely to focus on this sector. Electronic heavy and light manufacturing, and consumer goods have dominated the current state of research. However, as SCM expands into new industries, the research must follow.

Studies on the unique supply chains of the Agro dealers especially small scale are currently lacking and could develop novel insights for these rapidly growing fields.

2.8 Chapter Summary

This chapter reviewed literature regarding supply chain, supply chain management practices and other related topics. In reviewing this literature, some gaps were identified and have been highlighted and summarised here. Theories that support and relate to the study have also been presented.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

This chapter describes the methodology that was used in this research. The research was aimed at determining the impact of supply chain management practices on performance of small and medium enterprises in Lusaka.

A case study was used in this research which is defined as an enquiry that investigates a contemporary phenomenon within its real-life context Yin (2003). Yin argues that case study research allows the use of exploratory and explanatory research, and it helps to explore new areas for future research. He further pointed out that a case study acts as a vehicle for generalising the results. Exploratory studies are often used where the researcher wants to understand certain phenomena and problem at hand (Saunders et al).

The chapter includes the research design, study population, sampling design, data collection techniques and the data analysis techniques. This chapter also includes the proposed research model, the research hypothesis and concludes the ethical considerations.

3.2 Research Design

The research questions were answered using the descriptive study design. This design enabled Quantitative data was collected from questionnaires that were distributed to respondents from the small and medium enterprises. The use of questionnaires helped the study to generalize findings from data collected from the respondents.

3.3 Population of the Study

The population of this study includes the Small and Medium agro dealers in Lusaka district listed and registered with PACRA. As of April, 2020, the total number of small and medium enterprises that were registered with PACRA in Lusaka province was two hundred and forty five.

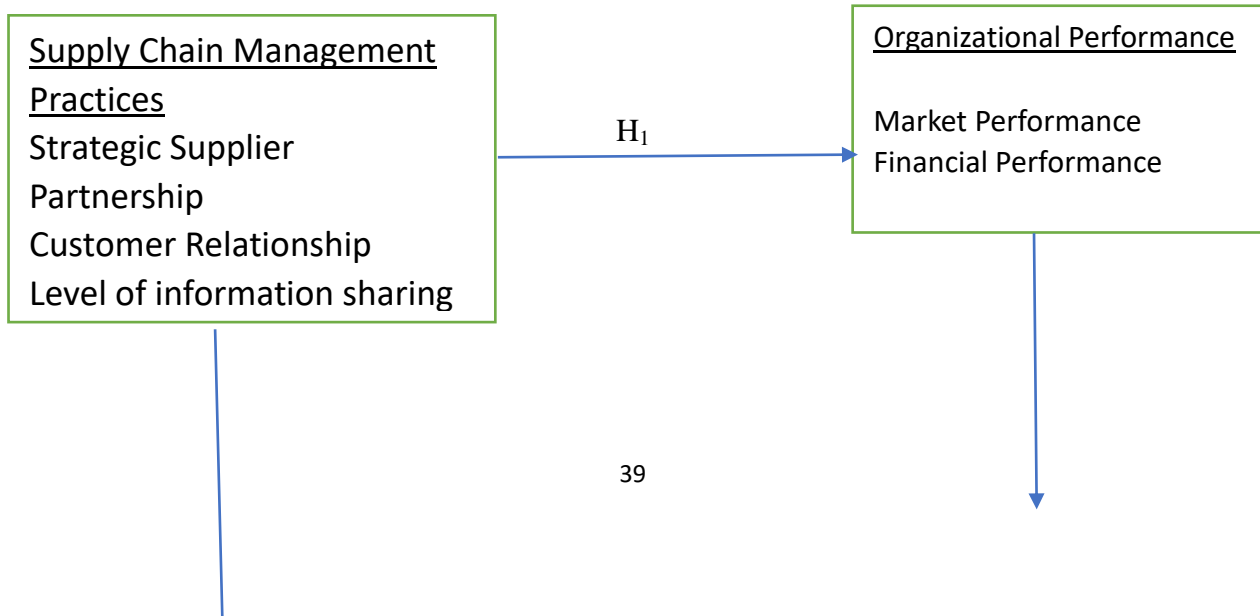
3.4 Sample size and sampling technique

A total of 245 Agro dealers are registered with PACRA. Using the Yamane formula, Out of the two hundred and forty-five (245) registered, one hundred and seventy-one (171) questionnaires were distributed personally and out of these 151 were returned. The response rate was above eighty (80 %).

3.5 Data Collection Methods

This study made use of data obtained from primary sources using questionnaires. The questionnaires were developed using the variables in the conceptual framework that has been adopted below. The validity and reliability of the questionnaires was achieved through performing pilot tests before administering the questionnaires. The questions were clear and in in English a language that all respondents could understand.

3.6 Conceptual Framework



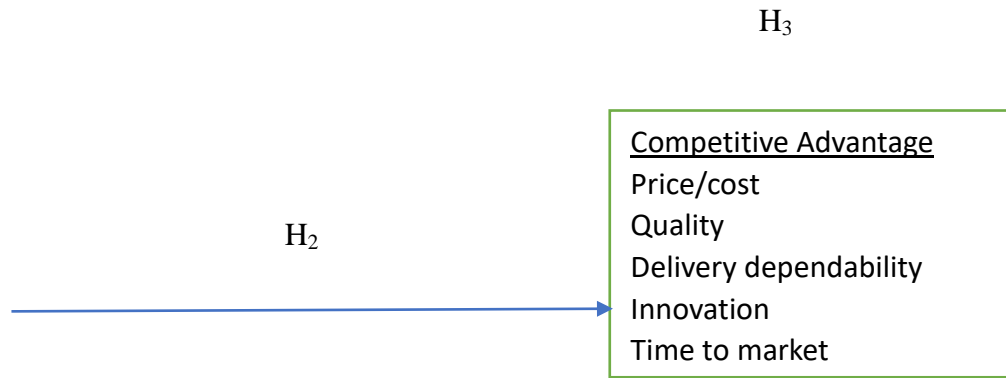


Figure 1: Conceptual Framework

The conceptual framework will provide a guide in obtaining a better understanding of the Impact of Supply Chain Management practices on Supply Chain Performance and competitive advantage of small and medium sized enterprises. Supply chain management practice is conceptualized in four dimensional construct, The four dimensions being strategic supplier relationships, customer relationship , level of information sharing, quality of information sharing and postponement supply chain in small and medium enterprises.

3.6.1 Research Hypotheses

The following are the hypothesis for this research

H1: there is a significant relationship between Supply Chain Management Practice (SCMPs) and SME performance.

H2: there is a significant relationship between SCMPs and competitive advantage

H3: The higher the competitive advantage the higher the performance.

3.6.2 Questionnaire

Using the variables from the conceptual framework, questionnaires were developed and distributed to small and medium enterprises, Agro dealers in Lusaka province. The questionnaire listed various questions that related to supply chain management practices and assisted the researcher with information that was key to the research. See Appendix 1.

3.6.3 Data Analysis

SPSS was the tool used to analyze the data collected from the questionnaires the researcher employed multiple linear regression to determine which variables were significant using the 95% confidence level.

The most critical measure of performance was identified to include competitive price offering, dependable delivery, return to investment as well as growth in return to investment and growth in sales volume.

3.6.4 Ethical Considerations

The researcher conducted the research with the permission of the University and was accorded an introductory letter that was provided to all respondents. The researcher assured the respondents that all information provided was for research purposes only. All other literature has been duly acknowledged.

3.7 Limitations

The research was a case study on Agro-dealers in Lusaka province. Although similar studies have been done in other countries on supply chain management practices, not much research has been conducted in Zambia. The research was also limited to Lusaka due to time and financial limitations.

3.8 Chapter Summary

The above chapter provides the methods that were used to gather information and also highlighted the target population, the sample size adopted and data collection methods that were used. The hypothesis was also presented in this chapter. The research limitations are also discussed.

CHAPTER 4

RESULTS

4.1 Introduction

This chapter presents the findings of the data collected for this research. The data from the questionnaires was analysed using SPSS as the tool for analysis and using regression analysis to provide an understanding of the various variables that were used and to answer our research questions as presented in chapter 2.

4.2 Descriptive Statistics

The analysis of the data collected was to provide answers to the research questions. To determine if there is an impact between supply chain management practices and performance of SMEs in the Agro sector in Lusaka.

4.2.1 Demographic Data

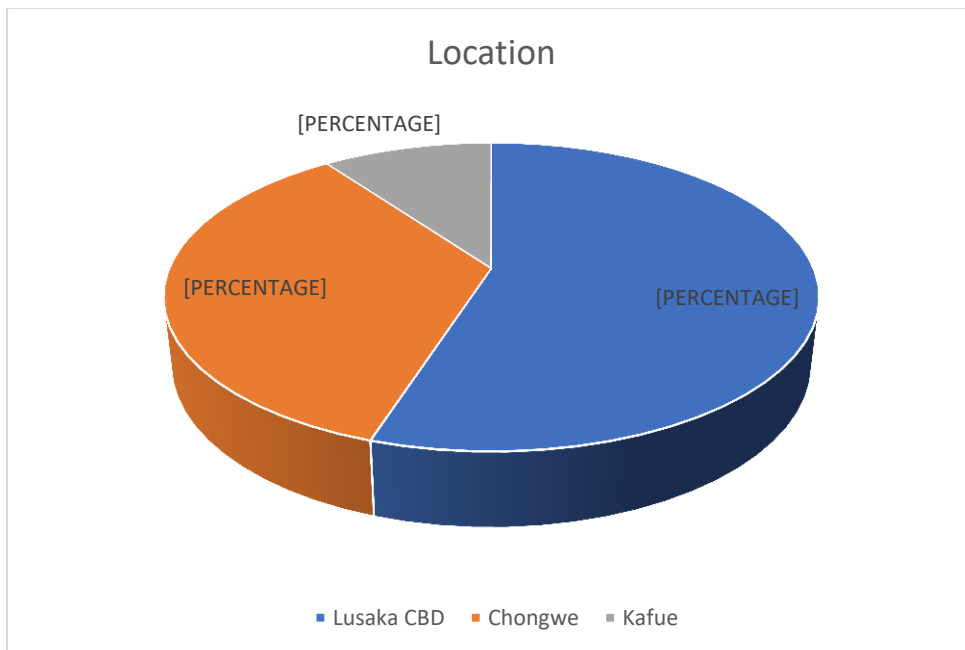


Figure 2: Location of respondents

Figure 3. Shows the Location of respondents. Based on the information obtained from PACRA, the researcher focused on Lusaka's central business district (CBD), Chongwe and Kafue as these were the areas that had the most Agro dealers. The chart depicts the

percentages of respondents as follows; 65% of the respondents came from Lusaka central business district, while 35% came from Chongwe district and 10% from Kafue district.

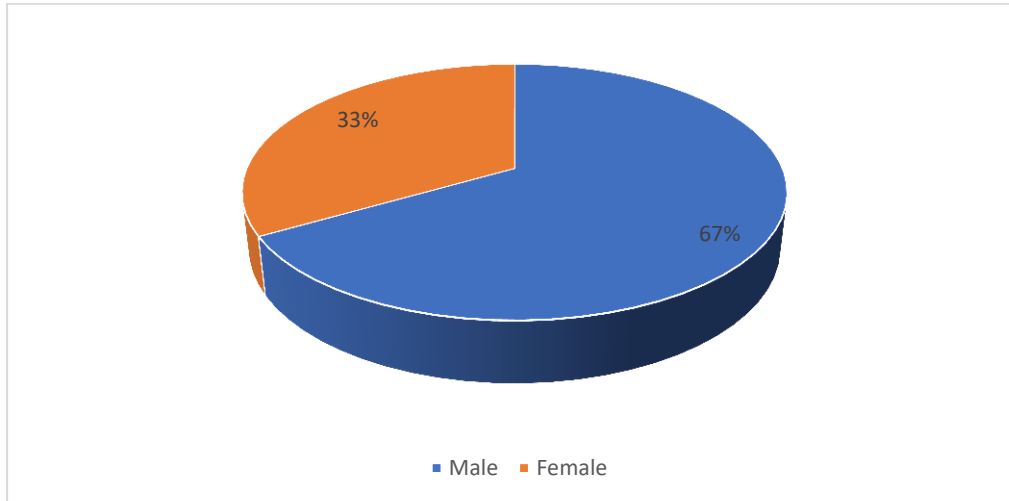


Figure 3: Gender of the respondents

Figure 4 above shows the results obtained from the study. The pie chart shows that sixty seven percent of the respondents were male while thirty three percent were female. Most of the respondents to the questionnaires were the owners of the businesses.

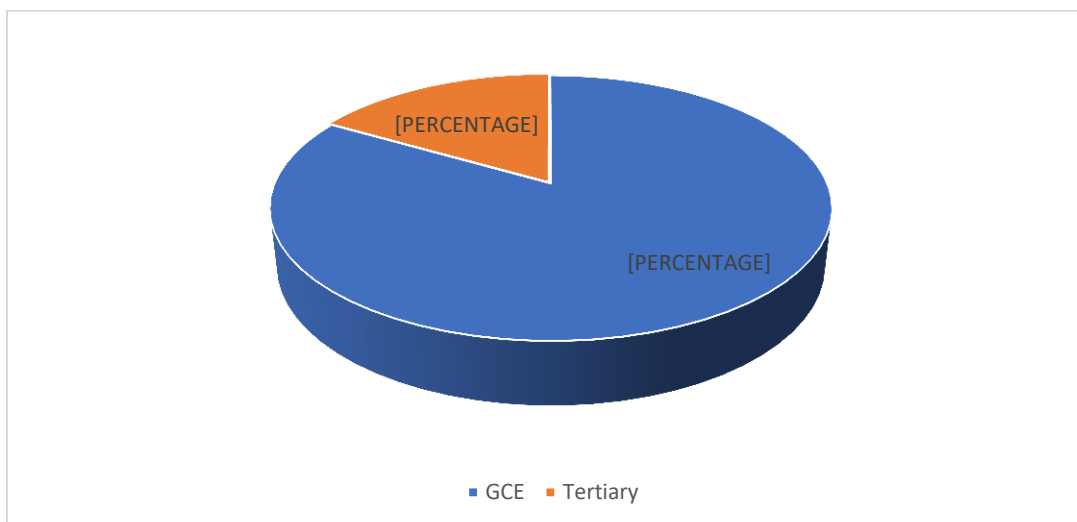


Figure 4: Level of education of respondents.

Figure 4 shows that the highest level of education that has been attained by the respondents. Eighty three percent of the respondents have been to have attained general certificate of education as the highest level and seventeen percent of the respondents have attained some tertiary education. From the above data, this type of business is mostly managed by those who have never been to college and or university. Those who have attained tertiary education mostly do such business as a part time venture or leave it to the family to manage.

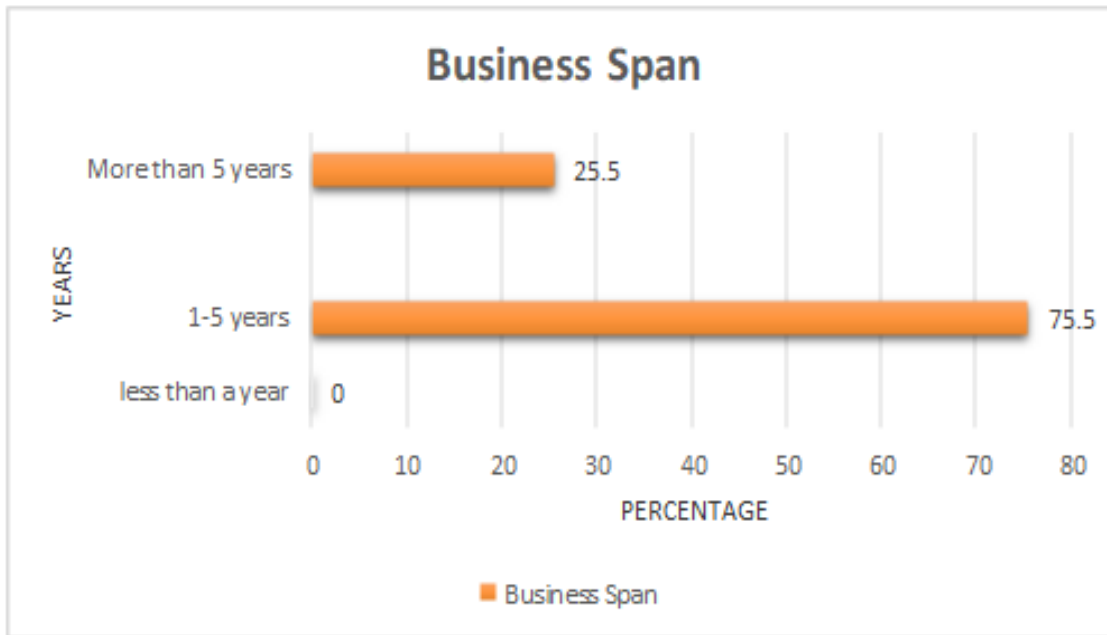


Figure 5: Business span

Figure 5 above shows life span of the business, it helps to explain how long a business has been operational. Based on the responses and the chart above, seventy five percent of the respondents have in business between one to five years and twenty five percent have been in business for more than five years

4.3. Analysis of the results

The mean and standard deviation for each of the constructs was calculated and the results are presented below. From the conceptual framework that has been adopted for this research, four constructs from the supply chain management practices were used. The four used in this research were; Strategic supplier relationships, customer relationships, level of information sharing and the quality of information sharing.

Table 2: Strategic supplier relationships

	We consider quality when selecting supplier	We jointly solve problems with suppliers	we help our supplier improve their product quality	we have continuous improvement programs	we include our key suppliers in planning and goal setting
Mean	4.73	3.53	3.62	2.67	3.37
N	151	151	151	151	151
Std. Deviation	.489	.587	.586	.630	.596

Table 2 above is a summary of responses relating to the relationship that the SMEs have with their suppliers. Various questions relating to this relationship were asked and the mean and standard deviation of the responses are summarised above.

Table 3: Customer Relationships

	we frequently interact with customers to set reliability	we frequently interact with customers to set reliability	we frequently determine customer expectations	we facilitate customer ability to seek assistance from us	we periodically evaluate the importance of our relationship with customers
Mean	3.12	2.97	3.54	4.01	3.53
N	151	151	151	151	151
Std. Deviation	.565	.621	.640	.356	.551

Table 3 above summarises responses relating to the relationship that the SMEs have with their customers.

Table 4: Level of information sharing

	Inform trading partners of in advance of changing needs	Trading partners share proprietary information with us	Trading partners keep us informed about issues that affect us	Trading partners share business knowledge with us	We and trading partners share info that helps establish planning
Mean	3.80	4.02	3.64	1.32	1.33
N	151	151	151	151	151
Standard Deviation	.417	.270	.508	.479	.500

The table above is a summary of responses relating to the level of information sharing between the SMEs and their suppliers

Table 5: Quality of Information sharing

	information exchange between us and trading partners is timely	Information exchange is accurate	Information exchange is adequate	Information exchange is reliable
Mean	3.62	4.08	4.15	4.03
N	151	151	151	151
Std. Deviation	.486	.337	.640	.431

Regression Analysis Summary

Based on the summary of responses, regression analysis was then performed, and the results are presented in the table below.

Table 6: Regression output

Model	Unstandardized Coefficients		Standardized Coefficients	t	p-value	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	3.429	.696		4.930	.000	2.054	4.804
Strategic Supplier Relationship(SSR)	.401	.100	.308	4.014	.000	.203	.598
Customer Relationship Level of information sharing	.013	.079	-.013	.171	.864	-1.142	.169
Quality of Information Sharing	-.317	.109	.243	-2.903	.004	-.533	-.101
	-.197	.107	.154	1.838	.0048	-.409	.015

Management practices have an impact on the performance of the SMEs. A one percent increase in the Strategic Supplier Relation will increase the supply chain performance by 0.308 according to the multiple regression above. A one percent increase in the level of information sharing between agro dealers and their suppliers will increase the performance by 0.243 according to the multiple regression output above. Lastly a one percent increase in the

quality of information sharing will increase the competitive advantage by 0.154. Therefore, these variables have an impact on the performance of the SMEs.

The regression analysis highlights that only Strategic Supplier Relationship (SSR), Level of information sharing, and Quality of Information Sharing are significantly related to Supply Chain Performance in a multi-variable regression. The above figure shows us the multiple regression analysis details which indicate:

The p-value analysis, as shown above, shows that only Strategic Supplier Relationship (SSR), Level of information sharing, and Quality of Information Sharing are significantly important in

Predicting the variability in Supply Chain Performance. While the p-value of customer relationship is 0.864 which renders it insignificant in the regression analysis.

However, running the regression analysis without the first variable (level of information sharing) rendered customer relationship significant as shown below.

Table 7: Regression output dependant variable competitive advantage

Model	Unstandardized Coefficients		Standardized Coefficients	t	p-value	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
1 (Constant)	2.9029	.696		4.930	.000	2.054	4.804
Customer Relationship	.033	.079	.043	.171	.002	-.142	.169

Level of information sharing	-.217	.109	.143	.603	.0012	-.533	-.101
Quality of Information Sharing	-.057	.107	.354	.738	.0034	-.409	.015

a. Dependent Variable:
Competitive Advantage_X1

The influence of Supply chain Management Practices on Competitive Advantage

to explain the relationship between implementation of supply chain management practices and the resulting competitive advantage, each of the constructs were regressed against competitive advantage.

The graphs below show the results of regressing the competitive advantage with strategic supplier relations, level of information sharing and quality of information sharing. Based on the multi-variable regression above, all these factors are significantly important in predicting the variability and direction of the Supply Chain Performance.

The single-variable regression model is shown in each graph and the best fit line.

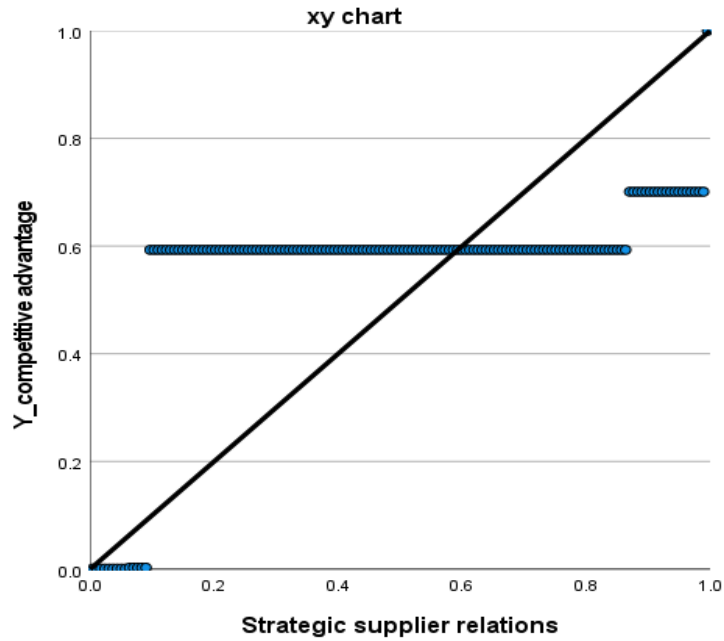


Figure 6: Strategic supplier relations

The above diagram shows the graph for the simple regression of Strategic Supplier Relations with competitive advantage as the dependent variable. From the graph above it has been shown that an increase in Strategic Supplier Relations such as considering quality when selecting suppliers also increases competitive advantage. Therefore, this answers research question 2 which is what is the influence of supply chain management practices on competitive advantage. The graph shows that using one of the practices, there is a positive relationship between strategic supplier relations and competitive advantage.

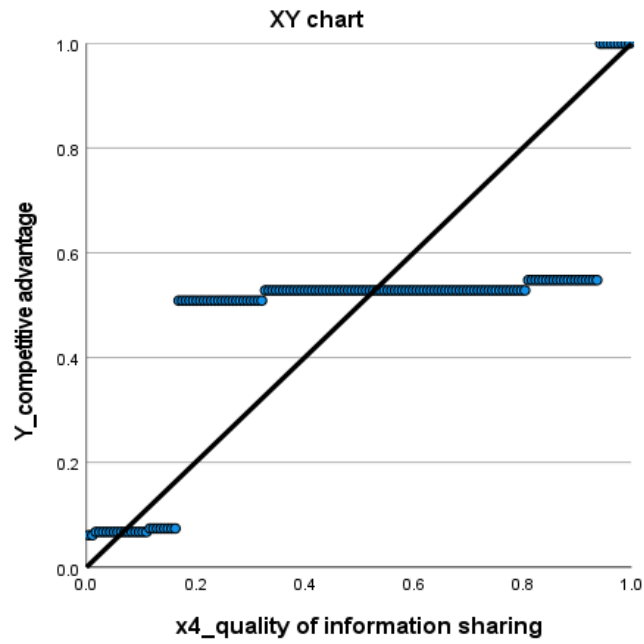


Figure 7: Quality of information sharing

The above diagram shows the graph for the simple regression of quality of information sharing with competitive advantage as the dependent variable. From the graph above it has been shown that an increase in quality of information sharing between the agro dealers and the suppliers in the supply chain will consequently increase competitive advantage. Therefore, research question 2 and 3 have been answered.

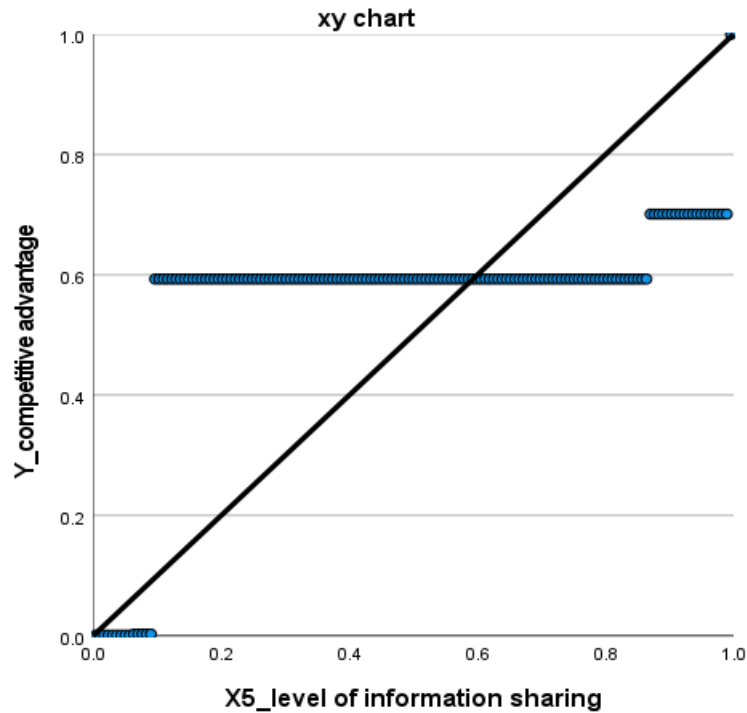


Figure 8: Level of information sharing

The above diagram shows the graph for the simple regression of level of information sharing with competitive advantage as the dependent variable. From the graph above it is shown that an increase in the level of information sharing between the agro dealers and the suppliers in the supply chain will consequently increase competitive advantage. Therefore, research question 2 and 3 have been answered.

The relationships proposed in the developed theoretical framework were represented through three hypotheses:

The Impact of customer relationships on performance of the SME

The results are a bit mixed regarding this variable. While literature indicates a significant positive correlation between the variable and Supply Chain Performance, the regression analysis does not support this relationship. It could be that customer Relationship is not a significant factor overall in small and medium agro dealers.

The Impact of level of information sharing on performance of the SME

The results showed that level of information sharing positively affect Supply chain performance ($p < .005$). Therefore, Hypothesis is supported. This means that any increase in

the level of information sharing will increase competitive advantage such as return on investment, growth in sales, etc.

The influence of quality of information sharing on competitive advantage.

The results showed that quality of information sharing positively affect competitive advantage ($p < .005$). Therefore, Hypothesis is supported. This means that any increase in Customer relationship management practices will increase the competitive advantage.

The influence of strategic supplier relation on competitive advantage.

The results showed that quality of strategic supplier relation on competitive advantage. ($P < .005$). Therefore, Hypothesis is supported. This means that any increase in strategic supplier relations practices will increase competitive advantage such as return on investment, growth in sales, etc.

Based on the above-mentioned results it could be concluded that all the four variables have some degree of influence on performance since a regression after dropping one variable made customer relation significant. However, additional tests and data collections will be needed to come to a more conclusive result as to whether customer relations are an important factor in analysing supply chain management and performance using competitive advantage.

The Pearson correlation table presents the relationships that exist between supply chain management practices and performance of the small and medium enterprises.

Table 8: Pearson correlation table

		Supply Chain Management Practices	SME Performance	Competitive Advantage
Supply Chain Management Practices	Pearson Correlation	1	0.637	
	Sig. (2-tailed)	0.00	.000	.000
	N	151	151	151
SME Performance	Pearson Correlation		1	0.856
	Sig. (2-tailed)	.000	.000	.000
	N	151	151	151
Competitive Advantage	Pearson Correlation		0.854	1
	Sig. (2-tailed)	.000	.000	.000
	N	151	151	151

** . Correlation is significant at the 0.05S level (2-tailed).

The Pearson table of correlation presented above helps to understand the relationship between the supply chain management practices and the performance of the SMEs and how the practices relate to competitive advantage of the SMEs.

In the Table above a summary of the correlation matrix for the three proposed hypotheses. This table indicates that SCMPs directly affect SCP (H1). Thus, SCMPs are considered vital and have an impact on improving the SCP of agro dealers. Therefore, these practices play a vital role to facilitate the flow of products and raw materials and for enhancing the SCP efficiency. The results in Table also show that the Pearson coefficient (r) for H1 is 0.637; the

correlation has a probability (p) value of 0.000 for 2-tailed test. Hence, a moderate positive and statistically significant correlation was found. Therefore, H₀ was rejected for H₁ at the 0.05 level.

The direct relationship between SCMPs and SME indicates that SCMPs directly affect SME performance. This suggests that, within the context of SME performance, the adoption and successful implementation of SCMPs will directly improve their financial and market share performances in the long run. This effect is in line with comparable previous studies found in the literature (Shin et al, 2000; Tan et al., 1998), which had not taken into consideration any intermediate variable(s) such as competitive advantage or SCP. The results show that there exists an immediate impact of SCP on SME performance. SME performance is also indirectly influenced by SCP. The results shown in Table indicate that the Pearson coefficient (r) for H₂ is 0.856; the correlation has a probability (p) value of 0.000 for 2-tailed test. Hence, a strong positive and statistically significant correlation was found. Therefore, H₀ was rejected for H₂.

Finally, the direct relationship between SCP and competitive advantage. This suggests that well-managed and well-executed SCP in terms of flexibility and integration of the SCP, responding quickly to customers, and having a few highly dependable suppliers will directly have a positive effect on SME performance. The results indicate that the Pearson coefficient (r) for H₃ is 0.854; the correlation has a probability (p) value of 0.000 for 2-tailed test. Hence, a strong positive and statistically significant correlation was found. Therefore, H₀ was rejected for H₃ at the 0.05 level.

The relationships proposed in the developed theoretical framework were represented through three hypotheses:

H₁: there is a significant relationship between SCMPs and SME performance.

H₂: there is a significant relationship between performance of the SME and its competitive advantage

H₃: the higher the level of performance the higher the competitive advantage.

Table 8 shows that implementation of the supply chain practices does have an impact on performance. The graphs that were presented above also show that the supply chain management practices have an influence on the competitive advantage. An increase in one variable resulted in an increase in the competitive advantage.

4.4 Chapter Summary

This chapter was the presentation of results from the research. It also includes the results from the statistical analysis that was done by the researcher and is presented in the figures and tables that have been included in the research.

CHAPTER 5

DISCUSSION AND CONCLUSION

5.1 Introduction

The chapter provides the summary of the findings from chapter four, it also gives the conclusions and recommendations of the study based on the objectives of the study. The objectives of this study were to determine the impact of supply chain management practices on performance of small and medium enterprises in Lusaka, and to determine if the increase in supply chain management practices results in an increase in competitive advantage of the SMEs.

5.2. Summary of Hypothesis testing

Table 9: Summary of Hypotheses Results

Hypothesis	Results
H ₀ : Supply chain management practices do not have an impact on performance H ₁ : Supply chain management practices have an impact on performance	Rejected
H ₀ : SCM Practices do not have an influence on competitive advantage H ₂ : SCM practices have an influence on competitive advantage	Rejected
H ₀ : Higher levels of supply chain management practices result in higher levels of performance H ₃ The higher the level of competitive advantage the higher the organization performance	Rejected

5.3 Discussion

The study revealed that most of the SMEs in the agricultural sector have implemented most of the supply chain management practices. They have created relationships with their suppliers and therefore this helps them coordinate their supplies better and have also good relationships with their customers on the other hand. The information flow between stakeholders in the supply chain also seems to be good.

5.3.1 Impact of Supply Chain Management Practices on Performance of SMEs

The first objective of the research was to establish the impact of supply chain management practices on the performance of SMEs the findings of this research support the view that SCM practices can have notable impact on competitive advantage and organizational performance. It should be noted that the SCM practices maybe influenced by circumstantial factors, such as the type of industry and firm size. For example, the level of customer relationship practice, measured by customer satisfactions and expectations, maybe higher for company located close to the consumer.

The larger organizations may have higher levels of SCM practices since they usually have more complex supply chain networks necessitating the need for more effective management of supply chain. The level of information quality maybe influenced negatively by the length of a supply chain. Information suffers from delay and distortion as it travels along the supply chain, the shorter the supply chain, the less chance it will get distorted.

5.3.2 Influence of Supply Chain Management Practices on the Competitive Advantage of SMEs

The second objective was to determine the influence of supply chain management practices on the level of competitive advantage. Using Pearson's table of correlation, the researcher found that Supply chain management practices had a positive impact on competitive advantage of the organisation. An increase in the implementation of the practices had a positive impact on competitive advantage.

5.3.3 The Higher the Competitive Advantage the Higher the Level of Performance for the SMEs

The third objective of the research was to establish if higher levels of competitive advantage result in higher levels of performance. The research used simple linear regression to depict and analyse the third objective. It was found that as competitive advantage of an organisation increased, so did the level of performance.

The study also revealed that strategic partnership with the suppliers was most important to the SMEs as it ensured that they could coordinate a continuous flow of supplies, consequently strategic partnership with the suppliers was successful in improving co-operation and communication and in reducing inventory levels.

Lack of systematic confirmatory research impedes general agreement on the use of instrument. Future research should revalidate measurement scales developed through this research. As the concept of SCM is complex and involves a network of companies in the

effort of producing and delivering a final product, its entire domain cannot be covered in just one study. Future research can expand the domain of SCM practice by considering additional dimensions such as geographical proximity, cross-functional coordination, logistics integration, which have been not taken into consideration in this study.

5.4 Conclusion

This research provides practical justification for a framework that identifies four key dimensions of SCM practices and describes the relationship among SCM practices, competitive advantage, and organizational performance.

The research helped answer three research questions: (1) do organizations with high levels of SCM practices have high levels of competitive advantage; (2) do organizations with high level of SCM practices have high levels of organizational performance; (3) do organizations with high levels of competitive advantage have a high level of organizational performance? For the purpose of answering the questions above, questionnaires were used to obtain responses from the respondents and statistical tools were used to analyse the responses. This study provides empirical evidence to support conceptual and prescriptive statements in the literature regarding the impact of SCM practices.

5.5 Recommendations

- The future study can also test the relationships/dependencies among five dimensions of SCM practices. For example, information sharing may require the establishment of a strategic supplier partnership.
- The data for the study consisted of responses from single respondents in an organization which maybe a cause for possible response bias. The results must be interpreted taking this limitation into account. The use of single respondent may generate some measurement inaccuracy. Future research should seek to utilize multiple respondents from each participating organization to enhance the research findings.
- It will also be of interest to use the respondents from pairs of organizations at two ends of supply chains. By comparing different view of SCM practices from organizations across the supply chain, it is possible to identify the strength and weakness of the supply chain and the best common SCM practice across the supply chain.

- Future research can study SCM issues at the supply chain level. Taking a single supply chain as an example, it is of interest to investigate the characteristics, policy, and mechanism governing this supply chain.

5.6 Chapter Summary

This chapter discussed and concluded the study. The chapter showed how the research questions were answered. The results to the hypothesis testing were also presented and a conclusion was drawn

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APPENDICES

Appendix 1: Questionnaire



The University of Zambia
Graduate School of Business

The Impact of supply chain Management Practices on Performance of Small and Medium Sized Enterprises; A Case of Agro Business in Lusaka

Mubanga Chileshe

MSC PROJECTS OPERATIONS AND SUPPLY CHAIN MANAGEMENT

For more information or any queries, kindly get in touch on mchileshej@gmail.com

Dear Respondent,

I am a student at the University of Zambia in my final stage pursuing an MBA in Management Strategy. As partial fulfilment for the award of a master's degree, *The Impact of supply chain Management Practices on Performance of Small and Medium Sized Enterprises; A Case of Agro Business in Lusaka*

You have been purposefully sampled to provide information for the topic indicated above. The information being collected is purely for academic purposes as such, it will be treated with maximum confidentiality. Subsequently, you are not supposed to indicate your name or any personal information that can lead to revealing of your identity.

Your co-operation will be greatly appreciated.

For more information or any queries, kindly get in touch with the following:

Project Supervisor: DR. Jackson Phiri: Jackson.phiri@cs.unza.zm

SME Survey Questionnaires

Name of

Organisation _____

Part One: Demographic information (Please tick [√])

1. Number of employees in the organization:
2. Sales volume:
3. Job title:
4. Years with the organization

Part Two: Supply Chain Management Practices

SD = strongly disagree | D = Disagree | N = Neutral | A = Agree | SA = Strongly Agree

No	Statement					
Strategic Supplier Relationship (SSP)		SD	D	N	A	SA
1	We consider quality as our number one criterion in selecting suppliers	1	2	3	4	5
2	We regularly solve problems jointly with our suppliers	1	2	3	4	5
3	We have helped our suppliers to improve their product quality	1	2	3	4	5
4	We have continuous improvement programs that include our suppliers	1	2	3	4	5
5	We include our key suppliers in our planning and goal setting activities	1	2	3	4	5
Customer Relationship		SD	D	N	A	SA
1	We frequently interact with customers to set reliability,	1	2	3	4	5

	responsiveness, and other standards for us					
2	We frequently measure and evaluate customer satisfaction	1	2	3	4	5
3	We frequently determine future customer expectations	1	2	3	4	5
4	We facilitate customers' ability to seek assistance from us	1	2	3	4	5
5	We periodically evaluate the importance of our relationship with our customers	1	2	3	4	5
Level of Information Sharing		SD	D	N	A	SA
1	We inform trading partners in advance of changing needs	1	2	3	4	5
2	Our trading partners share proprietary information with us	1	2	3	4	5
3	Our trading partners keep us fully informed about issues that affect our business	1	2	3	4	5
4	Our trading partners share business knowledge and core business processes with us	1	2	3	4	5
5	We and our partners share in information that helps establishment of business planning	1	2	3	4	5
Quality of Information Sharing		SD	D	N	A	SA
1	Information exchange between our trading partners and us is timely	1	2	3	4	5
2	Information exchange between our trading partners and us is accurate	1	2	3	4	5
3	Information exchange between our trading partners and us is complete	1	2	3	4	5

4	Information exchange between our trading partners and us is adequate	1	2	3	4	5
5	Information exchange between our trading partners and us is reliable	1	2	3	4	5

Part Three: Competitive Advantage

No	Statement						
Price/Cost		SD	D	N	A	SA	NA
1	We offer competitive prices	1	2	3	4	5	-
2	We are able to offer prices as low or lower than our competitors	1	2	3	4	5	-
Quality		SD	D	N	A	SA	NA
1	We are able to compete based on quality	1	2	3	4	5	-
2	We offer products that are highly reliable	1	2	3	4	5	-
3	We offer products that are very durable	1	2	3	4	5	-
4	We offer high quality products to our customer	1	2	3	4	5	-
Delivery Dependability		SD	D	N	A	SA	NA
1	We deliver the kind of products needed	1	2	3	4	5	-
2	We deliver customer order on time	1	2	3	4	5	-
3	We provide dependable delivery	1	2	3	4	5	-
Product Innovation		SD	D	N	A	SA	NA
1	We provide customized products	1	2	3	4	5	-
2	We alter our product offerings to meet clients' needs	1	2	3	4	5	-

3	We respond well to customer demand for new features	1	2	3	4	5	-
2	We alter our product offerings to meet clients' needs	1	2	3	4	5	-
3	We respond well to customer demand for new features	1	2	3	4	5	-
Time to Market		SD	D	N	A	SA	NA
1	We deliver product to market quickly	1	2	3	4	5	-
2	We are first in the market to introduce new products	1	2	3	4	5	-
3	We have time to market lower than industry average	1	2	3	4	5	-
2	We have fast product development	1	2	3	4	5	-
Organizational Performance		SD	D	N	A	SA	NA
1	Market share	1	2	3	4	5	-
2	Return on investment	1	2	3	4	5	-
3	Growth of market share	1	2	3	4	5	-
2	Growth in sales	1	2	3	4	5	-
3	Growth in return on investment	1	2	3	4	5	-
	Profit margin on sales						
	Overall competitive position						

