



**UNIVERSITY
OF
LUSAKA**

SCHOOL OF POSTGRADUATE STUDIES

**AN ASSESSMENT ON THE EFFECTS OF CRITERIA USED BY SMEs IN
SELECTING SUPPLIERS OF GRAIN PROTECTANTS ON THE SUPPLY
CHAIN: A CASE STUDY OF SELECTED SMEs IN LUSAKA DISTRICT.**

**A DISSERTATION SUBMITTED TO THE SCHOOL OF POSTGRADUATE
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THE AWARD OF THE MASTER OF BUSINESS ADMINISTRATION
GENERAL**

BY

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DECLARATION

I Mumba Chibuye Sialumba do hereby declare that this dissertation is my own original work. It has been guided and marked by my supervisor in accordance with the guidelines for Master of Business Administration General at the University of Lusaka. It has not been submitted elsewhere for a postgraduate degree at this or another University.

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DEDICATION

To my mother Betty N. Kayombo, husband David Ng'ambi, Aunt Norma Sialumba Mwambazi, and former managing director of Syngenta Tibor Czigany, I would like to dedicate this thesis.

My desire to pursue a master's degree is made feasible by your dedication and guidance throughout my life. You laid the groundwork and provided a model for what the sky's the limit should be.

ABSTRACT

The study was conducted to assess the effect that the selection criteria of grain protectant suppliers have on the supply chain among Small and Medium Enterprises (SMEs) in Lusaka district. A cross sectional mixed-method study design was used, and the census was used to pick all SMEs that deal with that type of business, 50 SMEs in total in Lusaka district that were visited. Data were obtained using two tools, a structured questionnaire, and interviews.

The sample size was a census of all available 50 SME firms that deal in grain protectants, picking two participants from each. However, 45 participants were interviewed leaving out the 5 due to other non-response issues. The Pearson Correlation Coefficient Model was used to find relationships that exist between known variables. The model also gave a prediction of statistical significance between independent variables and the outcome variable, supply chain. This paper found that price or cost of supplier products, quality of supplier product, delivery on time aspect, inventory time and terms of service were factors that affect selection criteria which eventually have a bearing on the supply chain.

These findings show a positive statistically significant relationship between the selection criteria and supply chain using the Pearson Correlation Coefficient at ($r=0.575$; $P<0.05$). This study aims to bring out what SME expectations are from suppliers at the same time guide suppliers what SMEs look for in this informal sector yet has a huge impact. However, it also recommends that in coming up with effective suppliers, a basic list criterion is ideal as it makes it easier to develop health relationships.

Key words: Selection Criteria, Supply Chain, SMEs, Suppliers, Grain Protectants

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ACRONYMS

CEO Chief Executive Officer

ILO International Labor Organization

ITC International Trade Center

OECD Organization for Economic Co-operation and Development

SME Small and Medium Enterprises

UNCTAD United Nations Conference on Trade and Development

CHAPTER ONE

INTRODUCTION

1.0. Background

Small and medium-sized businesses (SMEs) support multinational corporations' efforts in a competitive market to meet community requirements and keep the supply chain fully stocked with goods. Household goods, agricultural inputs, hardware, groceries, and food supplies are a few of the products that SMEs concentrate on supplying. In order for enterprises to meet their environmental goals, suppliers are crucial. The need for a purchasing team to make sure that cost management is properly managed is what is causing the shift in trend to directly affect procurement. Consequently, the procedures for supplier selection should be considered (Stevenson, 2004).

Furthermore, Njanike, (2019) states that Small and Medium Enterprises (SMEs) form the backbone of economies worldwide, contributing significantly to employment generation, innovation, and economic growth. Within the dynamic landscape of global business, SMEs face numerous challenges, including intense competition, resource constraints, and evolving consumer demands. One critical aspect influencing the competitiveness and growth of SMEs is their selection of suppliers.

The competition among suppliers is stiff to supply and impress the SMEs business community and complete the supply chain management. Many factors are considered before a homogeneous product is bought from a supplier. This is a topic that most suppliers focus on to try and increase their market share and eventually run competition out of business. To achieve this or increase market share the supplier must address both the internal and external factors that affect their business. Demand being at the center of it, SMEs consider several factors which will be discussed in this research before selecting a specific set of suppliers.

The process of selecting suppliers is integral to the operations of SMEs, as it directly impacts their ability to deliver goods and services to customers efficiently and effectively.

Supplier selection involves assessing various criteria, such as cost, quality, reliability, responsiveness, and technological capabilities. These criteria serve as benchmarks for evaluating potential suppliers and determining the extent to which they align with the strategic goals and operational needs of the SME (Trung and Belihu, 2010).

However, In Africa, in especially developing countries, most Small and Medium Enterprises (SMEs) to continue face challenges that deter their growth and performance. The challenges range from the effects of technology, globalization, and liberalization to poor networking among the most cardinal players such as suppliers of goods and services as well as stiff competition from established firms (Gumboh & Gichira, 2015). Not to dwell on other issues so much, the essence of this research is to assess the effects of the criterion used in selecting suppliers by SMEs in business and this plays a critical role in the supply chain of goods and services.

In Zambia for instance, some suppliers have failed to perform to expectations thereby affecting SMEs businesses as well as the supply chain. One cardinal issue is in the agricultural sector that is marred with challenges is the supply side of businesses that do not sometimes meet the demands on the market and hence SMEs putting in a criterion on choosing which suppliers they see fit to supply them with goods and services. According to Mwamba & Lysons (2011), there has been a break down on the network of exchange relationships between most suppliers and organizations in the country which is cardinal in survival for enterprises as they depend on others. No enterprise is self-sufficient and this relationship within the supply chains is very vital and hence suppliers must be carefully selected.

Lusaka's District is a very competitive environment for doing business because of the consumerism and population size with many suppliers and SME's. Suppliers are expected to formulate attractive offering or contracts to get more floor space in shops and sway SMEs to sale more of their products but at the same time maintain their profits and collect their money. The purpose of this research was to investigate how supplier selection by SMEs in agribusiness impacts the supply value chain.

1.2 Problem Statement

All businesses need to be exposed to reputable suppliers in order to function successfully. They also need to be nurtured by larger companies by sharing important knowledge that will aid in their expansion. However, SMEs encounter difficulties when choosing suppliers by nature, and the majority of suppliers favor doing business with major corporations. The selection of suppliers is a multifaceted decision for SMEs, involving various criteria such as cost, quality, reliability, and responsiveness. However, according to Nambela (2020), the extent to which these criteria are prioritized and their impact on business growth remains a topic of inquiry in Zambia with most SMEs not even understanding the basics of selection criteria. Further, ILO (2015) bemoaned, the lack of choosing the correct supplier and stated that for most SMEs in Zambia, this is a challenging choice, with potentially big consequences for the business's success going forward and its capacity to get the high-quality goods and services it wants to sell.

Understanding the relationship between supplier selection criteria and SME growth is essential for enhancing decision-making processes and fostering sustainable development within the SME sector. Therefore, the aim of this study was to assess the effect of criteria used by SMEs in selecting suppliers on their business growth.

1.2. General objective

To assess the criteria that SMEs use in selecting suppliers of grain protectants and its effects on the supply chain among SMEs in the CBD of Lusaka city.

1.2.1 Specific objectives

1. To establish what suppliers must satisfy to meet the selection criteria set out by SMEs in Lusaka district.
2. To investigate the effect that the selection criteria set out by SMEs has on the supply value chain in Lusaka district.
3. To establish factors affecting the selection criteria of grain protector suppliers by SMEs in Lusaka district.
4. To determine what challenges SMEs face in selecting suppliers of grain protectants in Lusaka district.

1.2.2 Specific questions

1. What must suppliers meet to satisfy the requirements of selection criteria set out by SMEs in Lusaka district?
2. What are the effects of criteria used in the selection of suppliers on the supply value chain in Lusaka district?
3. What are the factors affecting the selection of grain protector suppliers in Lusaka district?
4. What are some of the challenges faced by SMEs in the selection of suppliers using such criterion in Lusaka district?

1.3. Research hypotheses

H0- SME's criterion for Supplier selection has effects on the supply chain

H1- SME's criterion for Supplier selection has no effect on the supply chain

1.4. Significance of the study

Suppliers of SMEs be it multinational companies, small and medium enterprises or individuals help to meet the demands for the growing population in the city and satisfy the needs of the market. The significance of this study is that it will bring out what SME expectations are from suppliers at the same time guide suppliers what SMEs look for in this informal sector yet has a huge impact. This study will then form a basis to which both SMEs and Suppliers can look to cement their market share and potentially grow.

1.5. Scope of the study

As the population is growing in the district there is need to understand multisectoral players that help sustain the needs of the growing population. This research will help assess the criteria set out by SMEs to select suppliers in Lusaka District. The Scope of study will there focus on score cards set out by SMEs to select suppliers and at the same time guide suppliers how they can position themselves for growth having fully understood the score card set out by SMEs in Lusaka District.

1.6. Definition of key terms and concepts

Small and Medium Enterprise (SME)	<p>For the country to achieve economic growth and development, SMEs must be allowed space to operate and participate in free economic trade. The first definition we shall understand when used in this report is SME.</p> <p>Al-Herwi (2019), SMEs stand for Small and Medium Sized Enterprise, and these are business whose finance and personnel falls below a certain limit. Usually, CEOs of these SMEs are owners, founders, and managers.</p> <p>Throughout in this research an SME is to be viewed as a Small and Medium Sized Enterprise or Business whose finance, assets, employee base and technology is below a certain threshold.</p>
Supplier	<p>A supplier could be a person or company or an organization or any other entity that provides something that another person, company, organization, or entity does not have (http://marketbusinessnews.com/financial-glosary/supplier/amp)</p> <p>In this research Suppliers are to be viewed as multinational and big businesses that are into distribution of goods and services in the retail market.</p>
Internal Factors	<p>Internal factors- These are strengths and weaknesses an organization faces with its employees, finances, and products</p>
External Factors	<p>External factors- These are opportunities and threats to an organization's success.</p>

CHAPTER TWO

LITERATURE REVIEW

2.0. Introduction

This chapter discusses the literature review that assesses how SMEs select Suppliers in different cities across the world. The discussion further brings in regional selection criteria for suppliers among SMEs. The review will then narrow the discussion to Local Supplier selection criteria among SMEs in Lusaka District.

Cities world over are a hub of economic activities. SMEs have been viewed as the important contributor job creation and global economic development (World Bank, Nd). Cities are a hub of different Small and Medium Enterprises dealing in a wide range of items that meet the needs of the immediate population and beyond. To meet the demands of the SME community, different suppliers do all what it takes to be listed and join a list of suppliers at any given time.

2.1 Supplier positioning to meet SME needs

The SME market can adjust timely to the changing needs of the market demand. The Suppliers for SMEs who are most Multinational companies may not have the same ability as SMEs. Therefore, for SMEs to pick on a supplier one of the assessments they make is to assess the cost of the product against similar products offered by more than one supplier. The cost of products that meets the market needs and that is bound to increase gains for the SME tend to be picked and given an opportunity to be procured and traded by SMEs. An international symposium held in Sarajevo in 2010 in discussing the Importance of SMEs in developing economies discussed SME prowess when it comes to marketing and the ability that SMEs have react to changing market needs (Keskin, et.al, 2010).

Consumerism in urban cities is a potential for economic growth. Africa has reported higher unemployment levels however when SME sector is enhanced could be a profitable sector that can reduce unemployment and bring about economic growth and development. Suppliers need to support SMEs in financial education, business environment,

institutional support systems and innovations (Njanike, 2019). This entails that supplier need to go beyond supplying but look at supporting SMEs for growth models.

SMEs play a vital role in the Country's economic growth. At the same time SMEs lack in many areas such as Business Sustainability Planning and networking. Suppliers must therefore support SMEs with capacity building in marketing and finance. Capacity building can help SMEs to grow thereby increase their stock demand thereby increasing the market share. An ILO Research paper on enhancing Zambian SMEs competitiveness and access to finance presented results that could come because of enhanced support by suppliers and banks such as increased networking, expansion of businesses, increase supply and demand (ILO, 2015).

Every Business wants to deal with a reliable and consistent supplier in order to keep the customers (Bendoly, Craig and DeHoratius, 2018). For suppliers to meet the SME selection criteria they need to be consistent with the supply while maintain quality of the goods and products. An SME is bound to live a supplier who is inconsistent with supplies. Any disruption in supply could affect the SME and reduce customer confidence and profit for SMEs. This explains why SMEs place strong emphasis on consistency and quality.

Suppliers need the resource base which can help to plan months and years ahead in terms of production capacity (Trung and Belihu, 2010). That resource base is key in stabilizing supply as and when demanded. SMEs, therefore, try at all means to select suppliers who are reliable with supplies and who do not entirely depend on the SME capacity to pay for goods collected on credit.

In survey conducted in Zambia in 2010, SMEs bemoaned lack of finances as a constraint to their operations (ILO, 2015). This means all operations of SMEs center on finances. To keep a financial position where they can survive as SMEs, they would pick on suppliers who have stable financial status so as not to paralyze operations.

There are hardships that suppliers to SMEs face such as a break in production at times. The market forces that complete the supply chain may not understand these unplanned breaks in production. Any disruption in production causes market instability and panic at times among sector players. For a supplier to SMEs who deal with Consumers they are expected to build trust but more so increase communication criteria. A study by the

Canadian Center for Science and education on supplier relationships brought out key points to always remember about communication. Some of the issues were that communication could build trusts and inefficiencies in communication could crash that trust (<https://issgroup.com/2018/10/16>). Therefore, it is important that SMEs and Suppliers build on Trust which is centered on effective and timely communication.

“It seems that SMEs first start to drive economic growth when levels of income start to climb” noted Fjose et.al. (2010: 13). To achieve this fit in most Sub-Saharan regions SMEs pair with suppliers who can help them realize this trajectory and full potential.

In Zambia, SMEs are viewed as the backbone of the Economy, especially in achieving Sustainable Development goals number 8 and 10 which focus on decent work and economic growth and reduced inequalities respectively (ITC, ND). Suppliers must cushion the efforts of SMEs in attaining these global goals to the Country to achieve the bigger goal as the SME sector moves from the informal into the formal sector.

Financial Stability is the key component in suppliers positioning themselves for business opportunities with SMEs. SMEs in both developed and developing countries do not have financial capability at times because of the challenges to accessing financing from banks and financial lending institutions (UNCTAD, 2005). With this challenge in mind that SMEs face of financing they would want to deal with financially, stable suppliers who can supply goods on credit and allow SMEs to operate.

Supplier and SME interaction must be mutual yet respecting the business models. There are shortcomings in the supply and demand of the local market for financing between financial institutions and SMEs (<https://www.afdb.org>). This will entail that SMEs must have easy access to finance to benefits both the Financial Institutions and the SMEs.

SMEs play an important role in Zambia’s production, employment, and income. They have competing needs and must survive the harsh economic challenges. Suppliers must support SMEs if they are to contribute to the country’s Gross Domestic Product. SMEs with proper support models could help expand their investment portfolio. International Trade Center research on Promoting SME competitiveness in Zambia focused the attention on the 7th National Development Plan agenda of the government to create credit

guarantee scheme for issuance of low interest long-term loans to Zambian SMEs (ITC, ND).

2.2 How SMEs shortlist suppliers

The owner, who also serves as manager, oversees making all major decisions. The manager, who is also the owner, oversees a variety of duties and plays a crucial part in making decisions. They make a lifelong commitment to their work in the company and maintain a close working relationship with all the employees, clients, and suppliers (Loecheer, 2000). They operate all technological, administrative, and organizational processes within the company and have a thorough picture of their own firm. Owner-managers of SMEs are typically unwilling to delegate authority and power since they prefer to maintain control over many business-related decisions (Cannon, 1985). This quickens the decision-making process, but it also increases the chance that all points of view won't be heard.

In SMEs, the management structure frequently lacks designated departments, and staff members frequently perform many tasks simultaneously while working in a variety of settings with unclearly defined duties (Bodin, 2000). With more generalists, there is a low degree of job specialization. Because SMEs' functions tend to be less specialized and less likely to be separated by physical or organizational distance, the corporation of various functions is not always obvious (Tidd et al., 2005).

2.3 How SMEs impact supplier conduct

SMEs are Key players in economic activities and their conduct in doing business could impact suppliers negatively or positively. One of the surveys conducted by OECD, highlighted that SMEs have high due diligence in the Supply chain compared to suppliers (OECD, 2021). Their due diligence can therefore inform and govern suppliers on whether they need to change the product, review the product, or stop supplying the product. This is common at all stages of review.

As SMEs strive to grow and expand their presence and businesses, they also indirectly push suppliers who are usually large firms to also grow and expand. SME growth models increase demand which eventually calls for more supply and granting opportunities to

large firms (Aleman and Guerrero, 2016). The opportunities then extend to suppliers for growth and expansion equally thereby increasing the supply chain but more leading to the country's economic growth and development. It's a vicious cycle that needs to be harnessed for the world economies to thrive.

Large Multinational Companies and Firms sometimes offer SMEs products to sell then later SMEs are expected to pay. This system of trade must be transparent and conducted in an honest manner. Aleman and Guerrero, (2016: 26), in their survey mentioned that "the increase in supply chain transparency is the one aspect of supply chain management that could have benefits for small firms." Increased transparency benefits business houses with reputations to protect and improve how SMEs operate.

2.4. Theoretical framework

Previous researchers have proposed several theories that relate to supplies with regards business, and these include Institutional Theory, Resource based Theory and Stakeholders theory. A theory is an idea, or a set of principles, to describe something (Torraco, 2016). In this case the three selected theories will help understand how and why SMEs select certain suppliers.

2.4.1 Institutional theory

The focus of institutional theory is on elements that are crucial for internal or external sustainable innovation inside the enterprise. According to the institutional theory of sustainable growth for small and medium-sized businesses, opportunities with normative, coercive, and mimetic drivers do affect small and medium-sized businesses to influence environmental, social, or economic decision-making and to legitimize the vision of sustainable business practice (Caldera, Desha & Dawes, 2019). This notion informs how SMEs position themselves to work with reputed suppliers who won't drive clients away but instead draw them in with either competitive pricing or high-quality products. CEOs of SMEs must assess what is sustainable in their selection criteria at the institutional level..

2.4.2 Resource-based theory

The premise of the resource-based theory is the discovery of opportunities based on resource uniqueness that would result in competitive advantages (Grewal, Iyer, Javalgi & Radulovich, 2011). The theory evaluates all the resources that businesses require to successfully accomplish their goals and promote corporate expansion. Managers may help SMEs develop by choosing an effective growth strategy. SME CEOs have a vision, but to realize that vision, resources must be available. Our idea is crucial to this research because it will inform how SMEs connect with vendors and obtain financing that could enable them to diversify their resource base and maintain a growth trajectory. Understanding this resource-based theory will help SMEs to have proper resource accountability in their institutions and remain competitive in the business space.

2.4.3 Shareholders theory

According to the stakeholder theory, "any group or individual who may or may not be affected by the achievement of an organization" is given priority over investors when it comes to decision-making and labor benefits (Freeman, Harrison & Wicks, 2007). According to the stakeholder theory, companies should aim to maximize the value added of stakeholder wealth (Rosyadi et al., 2020). According to the stakeholder theory, businesses must consider the needs of the remaining shareholders and emphasize that they cannot solely concentrate all their attention on them. Suppliers, consumers, customers, and employees should all be considered by the business as important stakeholders in terms of the environment, economy, and social structures (Hami et al., 2018).

2.5 Factors affecting supply chain from the selection of supplier criterion point of view

There are many factors that affect the decisions to choose a supplier of goods and services, and these include brand reputation, quality, and availability of the said products in addition to cost and these influence the supply chain. Therefore, the decision must be made carefully among alternatives to select suppliers. The many other criteria used in the assessment of choice of supplier include reliability, financial factors, technology, delivery,

availability, quality, sustainability, and service. and in the in recent past, green purchasing is normally included in the supplier selection criteria due to the increasing awareness of people in environmental competency (Humphreys, Wong, and Chan, 2003; Zhu and Sarkis, 2004).

Previous studies however have indicated that quality is the most important criteria that most businesses use to choose suppliers. According to Kannan and Tan (2003), most studies that have examined that cost and delivery have stated that these two are the most impactful factors for those intending to make decisions of supplier choice contrary to practical approach. However, on the other hand, some studies have argued that cost is the least important factor in the choice of suppliers (Choi and Hartley, 2016). Others however feel technology is another element that take part in supplier selection criteria due to components that are not core to competencies of an organization shifting to suppliers with appropriate technology (Vonderembse and Tracey, 2009).

Therefore, the relationship between criteria used in choice of suppliers and supply chain is solely dependent on these factors and can be determined in both quantitative and qualitative criteria. Bhutta and Huq (2002) state that quantitative criteria would deal with the variables price, quality, and delivery while qualitative looks at the variables service, management compatibility, flexibility which are the variables that are difficult to quantify and requires the expert to assess the judgment.

2.6. Conceptual framework

The conceptual framework for this research adopted from the supply chain flexibility and SMEs internationalization (2017) has been developed to form the basis of assessing the criteria SMEs use to select suppliers and its effects on the supply chain. The conceptual framework indicates the various variables at play and how these play a critical role in choosing a supplier and the supply chain itself. Gligor (2014, p.586) suggests that any organization or business that aspires to adopt such factors in the selection of suppliers must indeed adopt firm strategies that are consistent with the supply chain orientation and its objective to compete through agile response. Selection criteria therefore in the supply chain needs a flexible alignment between supply chain partners who are the SMEs

and named suppliers with properly shared information and agreements (Singh & Acharya, 2013).

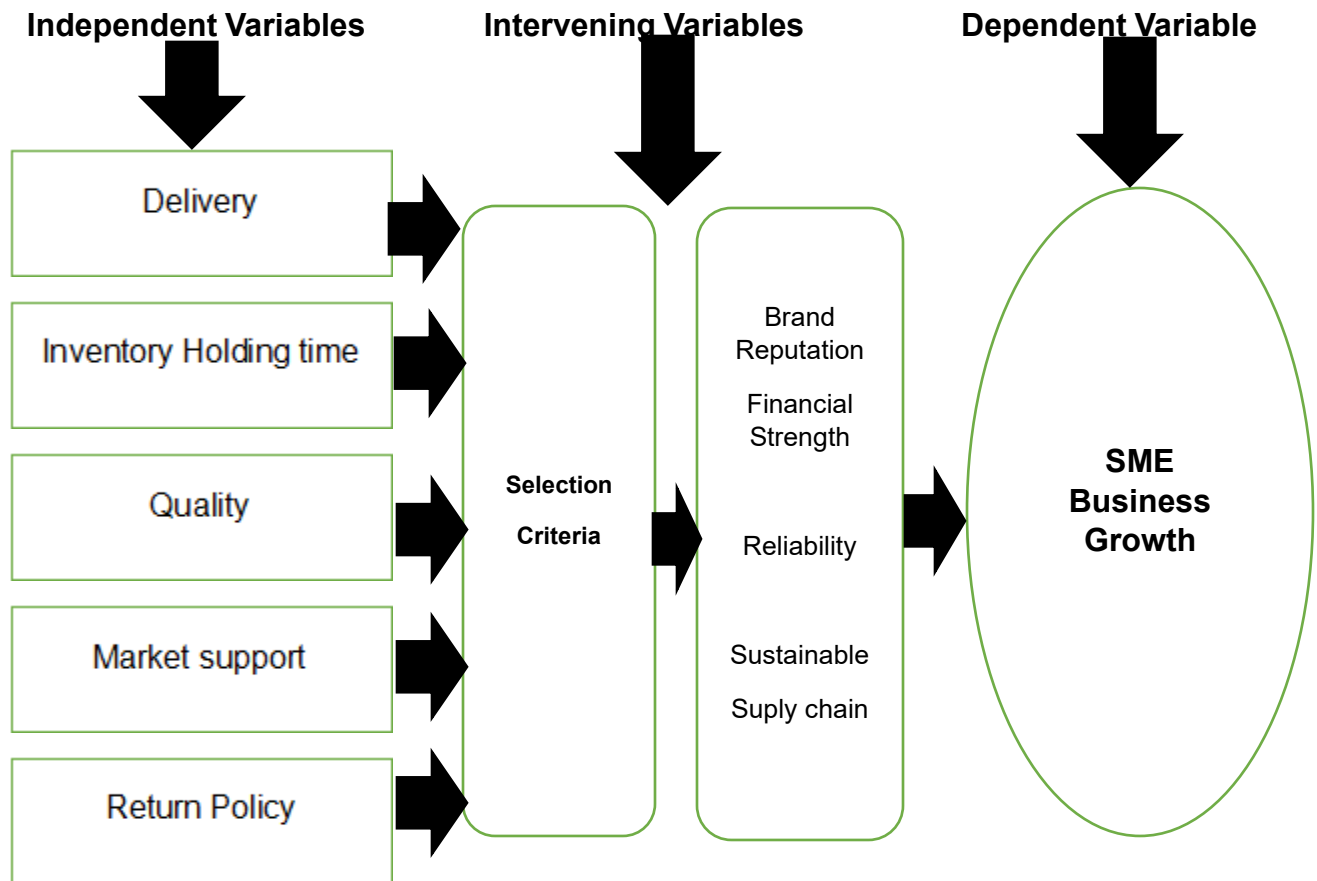


Figure 1: Conceptual Framework (Novillo, Sylvia & Hans-Dietrich, 2017)

CHAPTER THREE

METHODOLOGY

3.0 Introduction

There are numerous methods that could be used to conduct a study. One such method is a survey. A survey is a data collection tool used for quantifying and can be used to assess needs, evaluate demands, and examine impact (Glasgow, 2005). A survey instrument (in the form of a structured questionnaire) was considered be designed based on the literature review of previous research and discussions with industry practitioners and players and was used to collect data for the study. All questions were designed in such a manner that can be answered (by the respondents) from SME owners perspective using a five-point Likert scale. According to Croasmum and Ostrom (2011), Likert Scales is good to make self-assessment by using a five-point indicator which includes Strongly Agree (SA), Agree (A), Undecided (U), Disagree (D), Strongly Disagree (SD). The study involved understanding how SMEs select Suppliers and how this affects the supply chain. This guidance then enabled respondents to score their responses using the 5-pointer guidance.

For example, respondents were asked to indicate the importance of the supplier selection criteria factors, using a five-point Likert scale (1=not at all important, 5=extremely important).

3.1. Research approach

Research approaches are essential as they provide a leeway for finding cause and effect relationships between the independent variables and the outcome variable. Because this study seeks to assess the criterion used by SMEs in selecting suppliers and its effect on the supply chain, an approach that is explanatory in nature is ideal (Saunders, et al, 2009).

There are two distinct research approaches according to Horn (2012) namely Inductive and Deductive research approaches. Inductive approaches refer to those that involve the use of “bottom up” routes, i.e., starting from the bottom by making observations of instances, drawing patterns in those instances, and then making conclusions and creating

theories based on this, thereby giving a basis for generalizing on observed behavior. Deductive approaches however entail beginning with a theory, then using a downward spiral to the hypotheses, observing to test theories, and finally making conclusions on whether to adopt or reject the hypothesis (Horn, 2012). This study therefore utilized both Inductive and deductive approaches to fully answer the research questions.

3.2. Research design

Research designs are useful in answering research questions and objectives. According to Horn (2012), there are two cardinal designs quantitative and qualitative research designs. Quantitative designs are mainly characterized by numbers and are useful in the analysis of statistical measures whereas Qualitative designs deal with individual participants and their relation to their feelings, beliefs, assumptions, and desires thereby seeking to put these elements in a much wider context.

This study therefore was a survey of both qualitative and quantitative design methods and cross-sectional in nature, making it a mixed method research. According to Creswell and Clark (200), mixed methods in research are approached as inquiry that combine both qualitative and quantitative forms. It is thus said to be more than just a means of collecting and analyzing data but use of these both methods in tandem to strength the study unlike using one method. This was a cross-sectional survey where data was collected at one point in time from a sample selected to represent the larger population (Owens, 2002).

3.3. Study population

SMEs are in varying fields of manufacturing, trading, mining, and services delivery in Lusaka (Nuwagaba, 2015). The research study population was therefore representation of the various fields of SMEs found in Lusaka. The selected Study Population is 50 SMEs in various parts of Lusaka District.

3.4. Sample size

The sample of the study was based on the study population. And since this is a census of 50 SMEs, the sample size consisted of 2 personnel from each of the 50 SMEs in Lusaka district making it 100 respondents in total. The 100 was divided into two groups,

those who will be assigned questionnaires and those who were to be assigned interview guides as this is a mixed method research study.

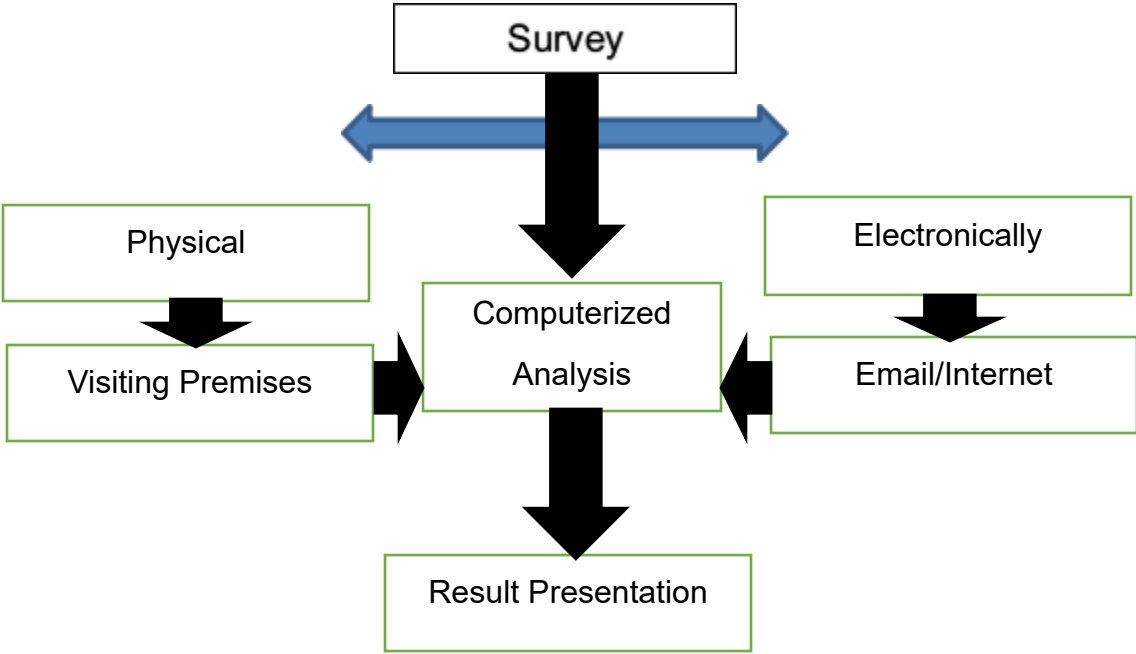
3.5. Sampling techniques

Because this is a census, purposive sampling technique was ideal for this study. According to Tongco (2007), Purposive sampling is a type of non-probability sampling that is useful when studying a particular cultural domain who are experts in a certain area of knowledge. It is useful for both quantitative and qualitative study designs. It is important to note the cardinal element of sampling. According to Horn (2012), sampling is done to make a set of valid predictions and generalizations that would be investigated and are related to the research methods and research objectives. On the other Cooper and Schindler (2008) argue that sampling lowers costs, makes reliability and validity eminent, fastens the process of data collection and avails study subjects ready for the process of data collection.

3.6. Data collection

The self-administered questionnaire though has a few disadvantages like issues of less spontaneity and high chances of tailored answers, has numerous advantages like enough time for the respondents to fully answer it as well as free will for respondents who might feel intimidated with face-to-face interviews (Wheater and Cook, 2000). The research therefore involved the use of a structured questionnaire with two modes of data collection for quantitative data collection. The first involved a physical meeting with SMEs in Lusaka but will also have a provision for electronic copy sent through emails to respondents. The questionnaire was measured on a 5 Point Likert Scale to get accurate results where, **5= excellent, 4= good, 3=average, 2= not satisfactory, 1= poor** (Murey, 2007).

Figure 2: Data collection structure



Source (Researcher’s own creation, 2023)

For qualitative data collection, one on one interviews with the respondents were done to get in-depth data on the topic at hand. Hence an interview guide will be ideal tool for this data collection part.

3.7. Data validation

Data screening and verification was done through test runs of frequencies to check for presence of errors. For Data that was received electronically was validated as it is being received whereas data that was received through hard copy questionnaires was subjected to screening and completeness before analysis using statistical software. Qualitative data were managed and processed through the software NVIVO version 18.0 using thematic analysis.

3.8. Data analysis

The statistical analysis software of this research was done using SPSS Version 20.0. SPSS software version 20.0 was used for data analysis in this research. For quantitative

analysis, Data was analyzed using both descriptive and inferential analysis. Descriptive analysis involved quantifying data into numbers and running frequency tables, summarizing data into percentages, graphs, and charts etc. Inferential statistics on the other hand involved the use of the Pearson correlation coefficient ideas to assess the relations between criterion used in selection of suppliers and the supply chain among SMEs in Lusaka city CBD with 95% confidence intervals and P-values of 0.05 or less showing statistical significance.

For the analysis of qualitative data, thematic data analysis methods were used. Thematic data analysis techniques as foundations of qualitative data involve identifying patterns or themes and then analysing these patterns within data. It is useful for such types of research designs because of its flexibility, valuable richness, and detailed data. It aims to identify themes or patterns that interpret various components of the research theme (Bhatia, 2018).

3.9 Reliability of research findings

According to Korstijen and Moses (2018), reliability refers to the degree to which a measure item gives credible results. To evaluate and enhance the credibility of research findings, the researcher must make sure prior inspection of research instruments is done including checking of questions to get better answers. Therefore, to ensure reliable results for this study, consistency, repeatability, and stability will determine reliability. Cooper & Schindler (2008) state that this entail the obtained results being identical as well as being applicable in other situations.

Reliability will further be evaluated based on the Alpha Cronbach Value between 0.6 and 0.8 using the software SPSS and will be reported as such.

3.10 Validity of research results

This is referred to as the truthfulness of results obtained from a study. Validity entails that the results must answer and address the challenges obtained from the study. It can either be internal or external validity. Internal validity refers to the legitimacy of the results while external validity refers to the transferability of the results produced to any other settings (Roberts, 2010). To therefore ensure validity for this research, issues of randomization

and allocation of enough time will be taken into consideration to allow more responses from respondents. Evaluation of validity will be done via Cronbach Alpha.

3.11. Ethical considerations

Like any other, this research will have a set of ethical issues that will be considered.

- i. Voluntary participation in research
- ii. Signing of a consent section before starting the questionnaire
- iii. Confidentiality of the participants and information which make up their unique selling points for business.
- iv. Only pieces of information shared and relevant to the research will be shared in his Research.

Ethics therefore will be upheld in this study by ensuring that any information obtained from participants is kept confidential and that the participants are not deceived by any means what-so-ever.

CHAPTER FOUR

DATA ANALYSIS AND PRESENTATION

4.0 Introduction

The fourth chapter of this study covers the analysis, interpretation, and presentation of field study findings. This study's primary objective was to evaluate the effects of the selection criteria used by SMEs in the Lusaka area to choose grain protectant suppliers on the supply chain. The study specifically aimed to respond to the following queries: What requirements suppliers must meet in order to meet the selection criteria set out by SMEs and how excellent these criteria are in the Lusaka district; what impact the selection criteria set out by SMEs has on the supply value chain in the Lusaka district; what factors affect the selection criteria of grain protector suppliers by SMEs in Lusaka district and what challenges SMEs face in selecting suppliers of grain protectants in Lusaka district. Tables, charts, frequencies, and percentages have all been used to present data.

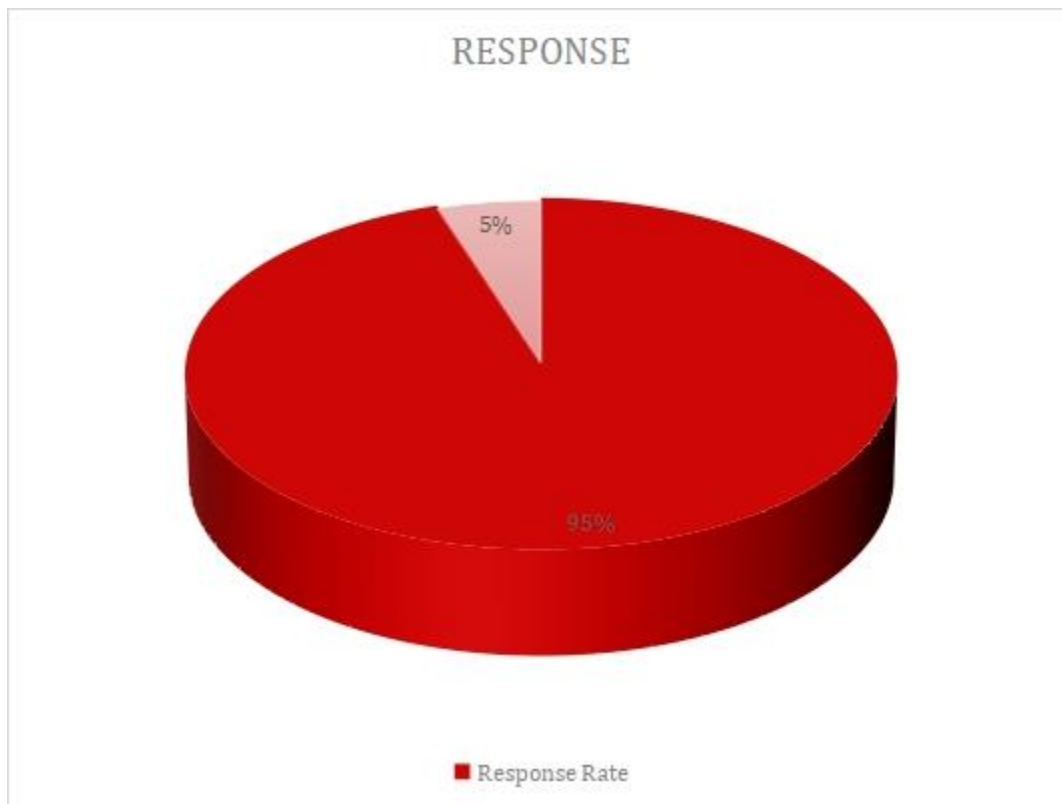
4.1 characteristics of respondents

The baseline demographic characteristics of the respondents are presented in this chapter's section along with other data points that are essential to the study's objectives.

4.1.1 Rate of response

100 employees from 50 different SMEs in the Lusaka district served as the sample population for this study. These 100 respondents were split in half to accommodate the questions on the questionnaire and the interview guide. The researcher also chose two workers from each of the 50 SMEs to make it simpler to deal with various types of personnel. And a 95 percent response rate was noted for the questionnaire and interview guide when combined, as can be shown in Figure 3 below, from a sample of 100 respondents.

Figure 3: Rate of response



Source: Field Data, 2023.

Field data presented in Figure 3 above represents that out of the 100 respondents interviewed using two tools (questionnaire and interview guide) a total of 95 responses were given with only 5 data collection tools returning answered.

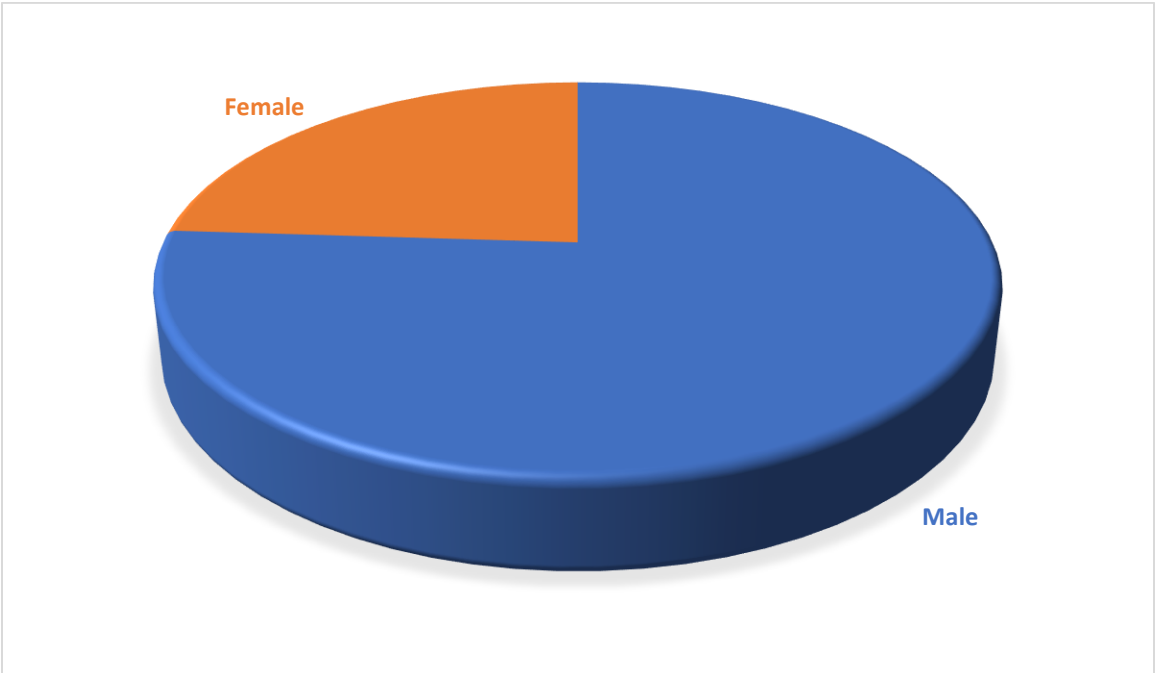
4.2 Quantitative data presentation

The first part of data presentation gives results from the 50 questionnaires and the part which used quantitative means of data analysis and the results are presented as follows.

4.2.1 Gender of respondents

When asked, each respondent indicated their sex, as shown in Table 1 and Figure 4 below.

Figure 4: Gender of Respondents



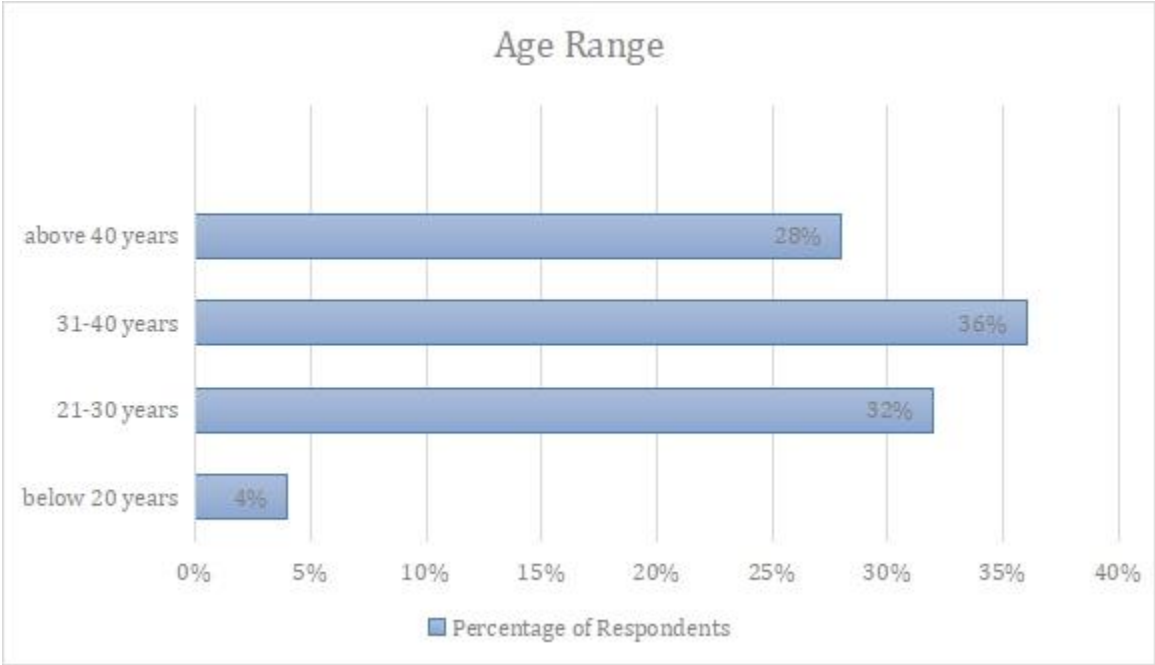
Source: Field Data, 2023.

Results on the gender of respondents' show that most of the respondents, 38, representing a proportion of 76% for the study were male employees while the remaining 12 were female employees representing a percentage of 24% which shows a gender biased proportion.

4.2.2 Age of respondents

Respondents were asked to state their age and results are presented in Table 2 and Figure 5 below.

Figure 5: Age in years



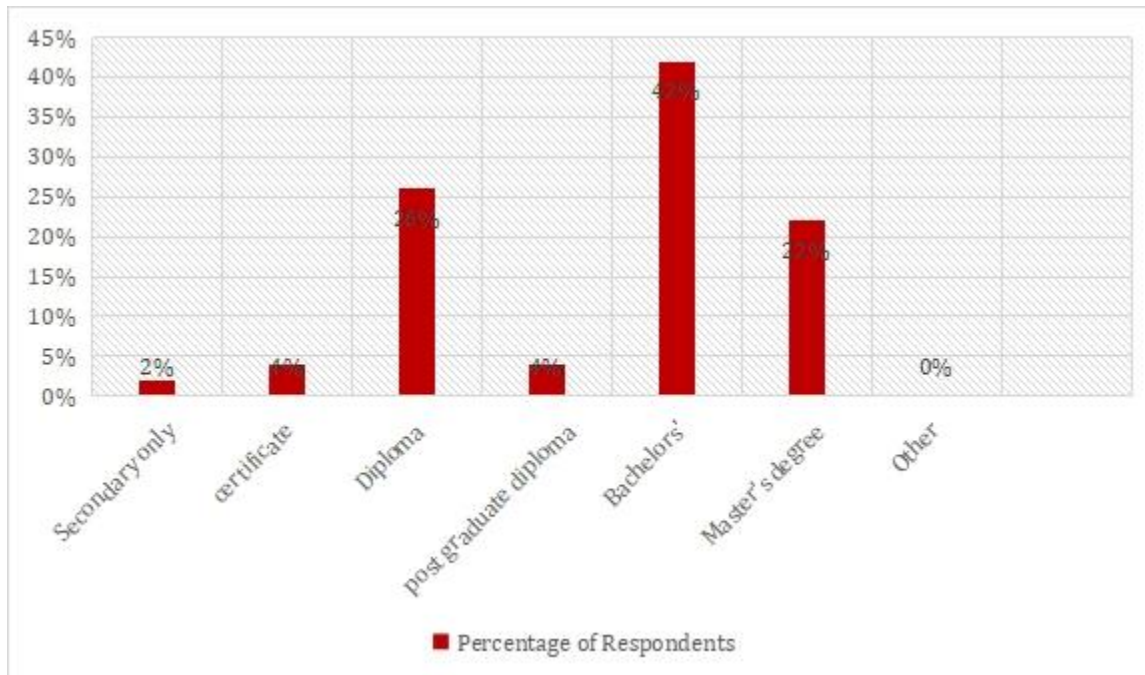
Source: Field Data, 2023.

The results from field data as shown in Table 2 and Figure 5 above on the age in years of respondents indicate that, those that were below the age of 20 are only 2 employees out of the 50, representing a percentage of 4% while 32% were in the age range of 21-30 years and 36% respondents were between 31-40 years old while the remaining 28% or 14 respondents out of 50 were above 40 years old.

4.2.3 Level of education

In a similar manner, respondents were asked to indicate their degree of education, and the results are shown in the following figure 6 and table 3.0.

Figure 6: Level of education of respondents



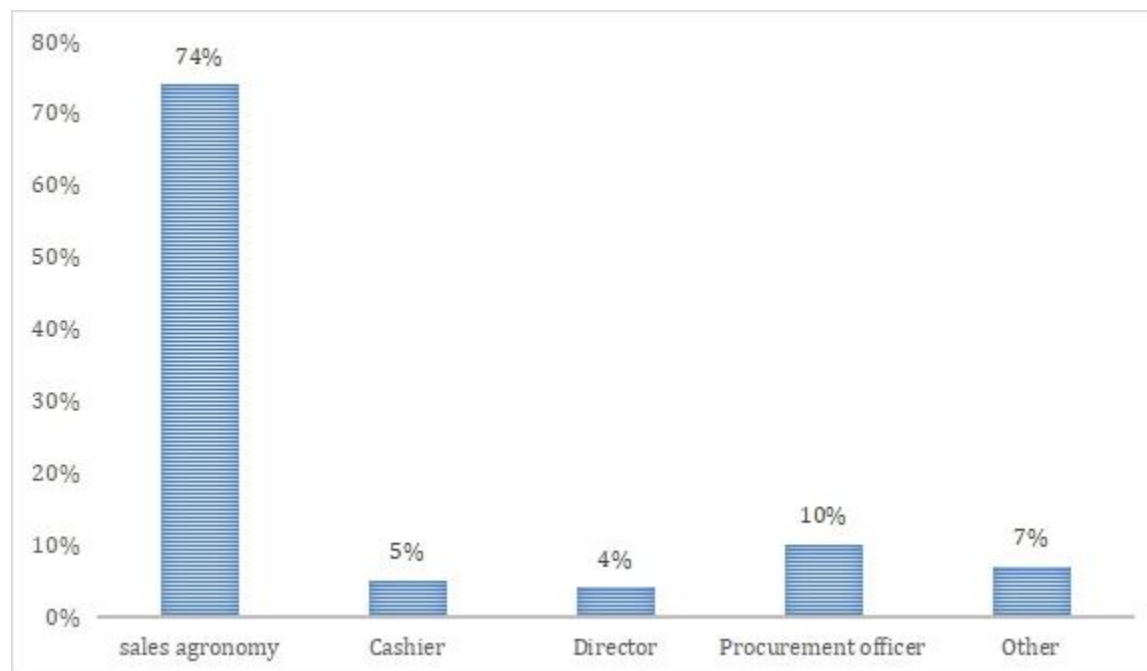
Source: Field Data, 2023

As shown in Table 3 and Figure 6 above, field data on the level of education indicate that most respondents had bachelors' degrees with a proportion of 42% followed by those who had diplomas at 26% and those who had masters' degrees at 22%. Only a few respondents had attained secondary school, 2%, had certificates and post-graduate diplomas, 4% and there were 0% respondents with other qualifications.

1.2.3 Occupation of respondents

Each respondent's occupation or more precisely, what they are responsible for performing was determined by the researcher. This was crucial to the study since it determined the level of responsibility given to each employee and was helpful in evaluating the employee's comprehension of the selection criteria and how it affected the supply chain. Figure 7 below displays the results.

Figure 7: Occupation of respondents



Source: Field Data, 2023

The results from Figure 7 above show that most respondents out of the 50 were sales agronomists standing at 74% while 10% were procurement officers, 5% were cashiers, 4% directors and other occupations stood at 7%.

4.3 Descriptive statistics on the effect of selection criteria of grain protectants on supply chain among SMEs in Lusaka district.

Using descriptive statistics, it was determined how the listed criteria utilized in the selection of grain protectants affected the supply chain among SMEs in the Lusaka district. This was crucial because it provided a foundation for figuring out how much the respondents knew about selection criteria and how they affected the supply chain. Table 4 below displays the results.

4.3.1: What suppliers must satisfy to meet the selection criteria set by SMEs in supplying grain protectants

For this objective, respondents were asked on how the conditions of service must be for suppliers to be selected for supply of grain protectants.

Table 4: Selection criteria

	Excellent	Good	Average	Not Satisfactory	Poor
Price of Products	80%	14%	4%	2%	0%
Delivery of goods on time	63%	27%	8%	2%	0%
Relationship Management	46%	48%	4.5%	1.5%	0%
Availability of Products	71%	20%	9%	0%	0%
Terms of services	67%	24%	9%	0%	0%
Types of services offered	54%	40%	6%	0%	0%
Brand strength	62%	30%	8%	0%	0%

Table 4 above highlights that most of the respondents indicated that the price of goods, delivery of goods on time, relationship management, availability of products, terms of service, types of services offered, and brand strength should be excellent for them to select grain protectants as can be seen from the high proportions that ticked excellent and good, about 75% of the total population. A minority however stated otherwise as seen from those who stated average, about 9%, those who stated Not satisfactory about 2% and those who stated Poor, about 0%.

4.3.2: The effect that the selection criteria set out by SMEs has on the supply value chain in Lusaka district.

To determine how this selection criterion affects the supply chain's value chain in terms of high and low supply, respondents were questioned to what extent the following had an impact on it. The results were derived from field data and are shown in table 5 below. The degree was measured on a five-point Likert scale where 5= Very large extent, 4= Large extent 3=Moderate extent, 2=Small extent and 1=Not at all.

Table 5: Effect of selection criteria

Statement	5	4	3	2	1
Accept a bid when prices of products are low	0%	0%	6%	6%	82%
Accept a bid when prices are high	30%	26%	8%	29%	7%
Based on How the product features are designed and the packaging	71%	21%	8%	0%	0%
Based on the delivery system of the supplier	80%	10%	6%	4%	0%
Based on How both parties manage their relationships	19%	22%	20%	15%	24%
Based on Availability of products	87%	7%	6%	0%	0%
Based on How the terms of service of supplier are	64%	22%	14%	0%	0%
Based on What type of services offered	9%	16%	47%	15%	13%
Based on How strong or weak the brand is	12%	12%	16%	25%	35%
Based on what the supplier offers (extra incentives and discounts or not)	17%	19%	21%	30%	27%

Research findings as shown in Table 5 above show that the majority of the respondents', 82%, of 50, stated that the supply chain is never affected at all when suppliers price of goods is low as they are able to buy while on the other hand about 56% of the respondents indicated that if prices are high, SMEs are sceptical about buying hence affecting the supply chain either to a very large extent or large extent. However, this was debatable as some respondents, 8%, 27% and 7% stated that this affected the supply chain to a moderate and small extent or not at all respectively. Further, about 93% of respondents indicated that the supply chain is affected to a large extent when SMEs select based on

the product features, design, and the packaging while the majority, more than 80% said choosing based on delivery system of the supplier affected the supply chain to a very larger extent.

About 94% also indicated that choosing based on the availability of products from the suppliers affected the supply chain to a larger extent while an evenly distributed number of respondents, 19%, 22%, 20%, 15% and 24% of the respondents stated that choice of supplier based on relationship management affected the supply chain to a certain degree. Other areas looked at indicating a majority, 64% of respondents stating that selection based on terms of service of supplier affected to the larger extent while about 47% stated the types of services offered moderately affected supply chain. On the strength of the brand, either half, about 50% either agreed or disagreed that this affecting supply to a certain degree. Based on what the supplier offers (extra incentives and discounts or not), 17% stated to a very large extent, 19% large extent, 21% moderate extent, 30% small extent and 27% indicated not at all.

4.3.3: Challenges SMEs face in selecting suppliers of grain protectants in Lusaka district.

On the challenges faced by respondents in selecting grain protectants, they were asked how difficult it is to choose among suppliers through these parameters using the scale below.

(5=Very difficult, 4=difficult, 3=Average, 2=Not difficult, 1=Easier)

Table 6: Challenges selection criteria

Statement	5	4	3	2	1
Time management and identifying quality service	0%	3%	7%	10%	80%
Assessment of supplier's technical capacity to supply	30%	48%	21%	1%	0%

Obtaining crucial information on supplier	0%	0%	16%	80%	4%
Lack of Knowledge of selection criteria and Procurement standards	0%	0%	0%	89%	11%
Financial strength and collateral of SMEs	20%	23%	42%	7%	8%
Supplier requirements/terms	51%	14%	24%	6%	5%

Results on which of the above is a challenge when dealing with issues of selection criteria are presented in Table 6. On time management and identifying quality service, predominantly 80% and another 10% stated it was not difficult and easier respectively. On assessment of supplier's technical capacity to supply, more than half of respondents, 30%, 48% and 21% stated that it is difficult, and averagely difficult to assess.

Further, 80% and more of respondents indicated that it was not difficult or easier to obtain respondent's information and 0% stated it was difficult. It can also be seen that almost all the respondents, 89% and 11% said it was not difficult or easier to have knowledge of selection criteria and procurement standards. On how difficult or easier it is to select based on their financial and collateral strength, less than 50% said it was difficult, 42% stated it was moderately difficult while 15% said it was not or easier. Finally on supplier requirement or terms, more than half, 65% stated it was difficult, 24% were neutral while 11% said it was not or easier.

4.3.4: Scores on the factors of selection criteria on supply value chain

To further establish the percentage response on a 5-point Likert scale such that **5=Very Large extent, 4=Large extent, 3=Moderate extent, 2=Small extent, 1=Not at all**) for the items on factors affecting selection criteria and how they affect the supply chain, the researcher computed the responses as shown in table 7 below.

Table 7: Factors Affecting Supply Chain

Factor	5	4	3	2	1
Inventory holding time	70%	20%	5%	3%	2%
Delivery system	80%	15%	4%	1%	0%
Market support	72%	13%	9%	4%	2%
Quality assessment	67%	21%	6%	6%	0%
Return Policy	22%	28%	16%	20%	14%

As presented in Table 7 above, the findings reveal that most respondents, more than 80%, agreed that inventory holding time, delivery systems, market support, and quality assessment had a significant bearing on the selection criteria and eventually on the supply chain while return policy presented a 50% significance.

4.4 Inferential statistics

The study's objective in this part was to determine if selection criteria had a favourable or unfavourable impact on the supplier value chain for SMEs in the Lusaka district according to the Pearson Correlation Coefficient of data analysis. Table 7 below displays the results.

Table 8: Inferential statistics

		Supply chain
Selection	Pearson Correlation	.575**
Criteria	Sig. (2-tailed)	.00
	N	31

**Correlation is significant at 0.05 levels (2-tailed)

*Correlation is significant at 0.01 levels (2-tailed)

4.4.1 Interpretations of the best predictors

The findings in Table 8 above reveal that there was a statistically significant positive relationship between selection criteria and the supply value chain ($r=0.575$; $P<0.05$). In interpreting this, it means that an improvement in the selection criteria of suppliers of grain protectants results in improved supply of grain protectants among SMEs in Lusaka district.

4.5 Hypothesis testing

H0: -. There is a statistically significant positive relationship between selection criteria and supply value chain.

The findings indicated a positive relationship between selection criteria and supply value chain in the selection of grain protectants among SMEs in Lusaka district. Therefore, the hypothesis above, which is true will be **ACCEPTED** as it goes against the NULL hypothesis which states otherwise. In adopting the alternative hypothesis, we agree that indeed selection criteria its specifics factors like inventory holding time, quality assessment, delivery system, market support and return policy all have a greater influence on the supply chain of grain protectants. All this is more evident in tables 7 and 8 above.

4.6 Assessment of validity

Validity, according to Roberts (2010), is the degree to which research findings generated by a study are accurate. Consequently, numerous steps were followed for this research to yield reliable data. Making sure the target sample was used effectively and taken exactly as it was one crucial concern. The second component was to ensure that every question in the questionnaire and interviews was geared toward fully achieving the study's goal (Cooper & Schindler, 2008).

4.7 Assessment of reliability

Reliability is the degree to which a study's instruments yield consistent results, according to Cooper & Schindler (2008). As a result, the researcher took care to ensure that there were no typographical or other flaws in the questions. Further, every question in the questionnaire and every interview was the same for every responder, and each tool came with the identical instructions. All of this was done to ensure that the data was handled effectively, providing us accurate results.

Using the SPSS, the Cronbach Alpha was calculated to assess the results of the current study's validity and reliability further (Cooper & Schindler, 2008).

The table below shows results of the Cronbach Alpha.

Table 9: Cronbach Alpha

Case processing summary

	N	Percentage%
valid	36	100
Excluded cases	0	0
Total	36	36

Listwise deletion based on all variables in the procedure

Table 10: Reliability statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
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.803	.794	8
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Reliability and validity for this research were therefore achieved looking at the study's Cronbach Alpha results which have a value of 0.803 which is within the acceptable range of 0.6 and 0.8.

4.8 Analysis of interviews (Quantitative data)

These findings are regarding the interviews conducted for the purpose of gathering primary data, for the qualitative analysis part. To answer the research questions in depth beyond just numbers and get further information the subject matter, the researcher sort to also use interviews. These interviews were conducted on the other half (50) of the respondents as the researcher sort it right to get more views by splitting the sample size into two for the nature of this study that was a mixed method study. However, of these 50 respondents, only 45 interviews were conducted giving us a non-response rate of 5% as indicated in chapter four above. Themes have been highlighted in subheadings based on the research questions used on the interview.

4.8.1 What suppliers must satisfy to meet the selection criteria set out by SMEs

For this part of the interview, respondents were required to state for most part what suppliers must satisfy to meet the set selection criteria in supplying grain protectants. The first question was based on whether SMEs thought the selection criteria was effective and made it possible for suppliers to meet requirement. Results on this question indicate that more than half of the respondents, about 36, stated that the selection criteria was effective enough for suppliers to meet these requirements set.

4.8.2 The effect of selection criteria on supply chain

Further, on the following effects of selection criteria and how affect the supply chain, the questions were based on:

a). The price of products

For this question, the respondents were asked how selection criteria based on prices of supplier goods affects the supply chain. In response, the majority, about 60% of the respondents of the 45 stated that when prices of goods are low or moderate, they can buy the product and hence this affects the supply chain positively. They also indicated however that when prices of supplier products are high, they are sometimes not able to negotiate and buy hence affecting the supply chain.

b). Quality of supplier goods

When asked on how the quality of supplier goods affect the supply chain, respondents stated that this affects supply chain in three ways. The majority indicated that when the quality of supplier products is good and of high standard, SMEs are impressed and are excited to buy hence positively affecting the supply chain. On the other hand, some respondents stated that when the quality of goods is low, SMEs are usually hesitant to buy hence negatively affecting the supply chain.

c). Product features and packaging

Respondents were further asked how the selection criteria based on product features and packaging affect selection and eventually supply of goods to consumers. Majority, more than 50% of SMEs stated that for every product, its features and packaging is very important and appealing to customers. Hence, Most SMEs are more likely to buy products that are well packaged and have features that suit the business. They therefore stated that when the products are not well packaged and its features not what they need, they are unlikely to select such suppliers and hence negatively affecting the supply chain as they would have wasted time on such a supplier.

d). Delivery system of goods

Asked on how the delivery system selection criteria is a factor in the supply chain, about 80% of the respondents indicated that delivery of goods on time was one of the most

important selection criteria of suppliers. This they said did not just affect the supply chain but also their business in terms of sales and losses.

e). Inventory holding time

Respondents were also asked on inventory withholding time affected supply chain. On this, half, 50% of respondents indicated inventory withholding time influences the supply chain as it determined when, the SMEs would be in possession of the goods and hence was one cardinal factor in determining a supplier. However, the other half, 50% stated that this was not an issue as it was always catered for by other selection criteria.

f). Demand of product

One other factor that needed to be looked at was the demand of product by consumers and how it was one of the factors affecting supply chain through selection criteria. Asked on how this factor influenced the supply chain, almost all the 45 respondents indicated that for them to buy a product, it was supposed to be marketable and on demand by consumers. This therefore meant that for suppliers to be selected, their kind of grain products must be on demand. Respondents therefore stated that having suppliers with products that were not on demand affected the supply chain negatively as SMEs were left to lengthen the selection further.

g). Brand association

With regards brand association, respondents were asked to state the extent this factor can affect the selection of a supplier by an SME. More than half, 75% or three quarters of the respondents stated that brand strength, association and name was cardinal in the selection of suppliers. The respondents stated that the stronger the brand association, the more likely a supplier was to be selected. Even more so, majority of respondents indicated that a good brand name or reputation is attractive to consumers hence putting the product on the spotlight and thereby increasing demand and positively affecting supply chain.

h). Return policy

On return policy, respondents were asked to state how this factor affects the supply value chain and how it is important to consider it in selection criteria. All the 45 respondents stated that the selection criteria are highly affected by the return policy as most SMEs didn't not want to risk their businesses in-case they were faulty. They stated that suppliers with this policy and that was well outlined and reasonable were most likely to be selected for supply of grain protectants. Further, all the respondents stated that without such policies, a company may get goods that are not needed by consumers and might not for instance be returnable within a specified time hence affecting the supply chain negatively.

4.8.3 Challenges faced in the selection criteria of grain protectants

Further, respondents were also asked to state some of the challenges they faced in the selection criteria processes in terms of the following items below and the responses are given as follows.

a). Financial management and record keeping

On whether it is a challenge to get track with financial management of suppliers and record keeping in the selection criteria. All 45 respondents interviewed stated that this was never a challenge as the selection criteria stipulates this as one of the records that suppliers need to present before being selected and hence makes it easier for SMEs.

b). Identifying quality service in suppliers

On identifying quality service offered by these suppliers, all the respondents stated that identifying quality service offered by suppliers was never a challenge as all supplier that would be selected were scrutinized fully by engaging all parameters in the selection criteria.

c). Assessment of supplier's capacity to supply products

This involved asking respondents whether they found it a challenge to assess supplier's capacity to supply grain protectants. Interestingly, majority of the respondents stated that

it was a challenge as all supplier's pledge to have these products in place and show willingness to supply at any given time. However, a few respondents stated that the selection criteria extend to scrutinizing supplier's history of supply with regards the commodity of other.

d). Obtaining crucial information on the supplier

On obtaining crucial information history of supplier as one of the cardinal elements useful to the selection process. All the respondents, 45, indicated that they don't have this as a challenge because it is mandatory in the process and is obtained mostly through records on supplier. Although it is mandatory, some however still stated that not all information is obtained.

e). Financial strength and collateral of SMEs

On financial strength and collateral being a constraint of successfully selecting and meeting some of the demands of the suppliers, half, about 22 respondents had a uniform answer of stating that sometimes it is difficult to select suppliers due to financial and collateral strength as a business entity. However, a half of the respondents indicated that they were always prepared to meet most of the suppliers' demands even before engaging them. This also was true for any other supplier requirements that needed to be sorted before a conclusion on selection is reached.

1.9 Summary

The fourth chapter of this report attempted to present the research findings of this study in detail. Tables, charts, and graphs have been used in the presentation to provide a full explanation of the results. In addition to providing background information on the respondents, the chapter highlighted their geographic characteristics. Descriptive and inferential statistics provided a full examination of how each independent variable affects the outcome variable (Supply Chain). As a result, it is clearer how the study's overall objective would be achieved. However, the following two chapters (chapters five and six) will provide a thorough analysis of the findings presented in chapter as well as conclusions and suggestions that are consistent with the objective of the study.

CHAPTER FIVE

DISCUSSION OF RESEARCH RESULTS

5.0 Introduction

The research study's concluding chapter examines the findings from the preceding chapter, which will aid in understanding the impact of the selection criteria on the supply chain used by SMEs in the Lusaka district to choose grain protectants. Its main goal will be to shed light on the major information that was obtained for the preceding chapter. Based on the findings in chapter four, the research problem, research objectives, and research questions will be addressed in this chapter. A summary of the research will conclude the chapter.

5.1 What suppliers must satisfy to meet the selection criteria set out by SMEs In Lusaka district.

For this part of the study, the objective was to find out what suppliers must satisfy for them to get selected. The results in Table 4 in chapter four (4) above highlights that most of the respondents indicated that the price of goods, delivery of goods on time, relationship management, availability of products, terms of service, types of services offered, and brand strength should be excellent for them to select grain protectants as can be seen from the high proportions that ticked excellent and good, about 75% of the total population. A minority however stated otherwise as seen from those who stated average, about 9%, those who stated that it should not always be satisfactory were about 2% and those who stated Poor, were about 0%. These results show that suppliers must have an all-round excellent service for them to stand out in the selection process set out by the SMEs.

On the other hand, the results also show that only a few disagreed with suppliers having excellent services for them to qualify for selection in the supply of the grain protectants. This they stated that there are many more other parameters that should be satisfied other than the mentioned about that may quantify selection.

The results from the interviews present a similar trend with those from questionnaires for most of the elements under discussion. For instance, on how effective the selection criteria are, field data or results on this indicate that more majority of the respondents appreciated the effectiveness of having a selection criterion in place especially when dealing with suppliers as it made it easier to come up with an effective supplier.

One respondent even further stated that “the selection criteria of suppliers is very effective as it reduces purchase risks and costs, increases customer satisfaction and brings close relationships between suppliers and buyers.” This assertion is echoed by Freg (2017) who stated in his study on supplier selection that selection criteria reduce costs, improves profits, reduces product lead time, satisfies the customer base, and increases competitiveness

The results obtained from this part of the study are like what other studies have found out with regards selection criteria and the price of goods, delivery of goods on time, relationship management, availability of products, terms of service, types of services offered and brand strength. For instance, Freg et al (2017) state that selection of supplier based on cost of their products is key especially when they present flexible prices because it reduces extra expenses, decreases product lead time, grows customer satisfaction, and strengthens competitiveness. Another study done by Beil (2009) indicate quality systems, relationship management and organization, history of business among others are cardinal elements in the selection criteria of suppliers.

5.2 Effect that the selection criteria set out by SMEs has on the supply value chain In Lusaka district.

On the effect that the selection criteria has on supply value chain, research findings as shown in table 5 in chapter four (4) above show that the majority of the respondents', 82%, of 50, stated that the supply chain is not always affected at all when suppliers cost of goods is low as these SMEs can negotiate through and buy these products without problems are able to buy while on the other hand the results also show that other SMEs were of the view that when cost of products is high, there is delay in purchase of products hence affecting the supply chain either to a very large extent or large extent.

However, this was debatable as some respondents, 8%, 27% and 7% stated that this affected supply chain to a moderate and small extent or not at all respectively. Further, about 93% respondents indicated that the supply chain is affected to a large extent when SMEs select based on the product features, design, and the packaging while the majority, more than 80% said choosing based on delivery system of the supplier affected the supply chain to a very larger extent.

About 94% also indicated that choosing based on the availability of products from the suppliers affected the supply chain to a larger extent while an evenly distributed number of respondents, 19%, 22%, 20%, 15% and 24% of the respondents stated that choice of supplier based on relationship management affected the supply chain to a certain degree. Other areas looked at indicate a majority, 64% of respondents stating that selection based on terms of service of supplier affected to the larger extent while about 47% stated the types of services offered moderately affected supply chain.

On the strength of the brand, either half, about 50% either agreed or disagreed that this affecting supply to a certain degree. Based on what the supplier offers (extra incentives and discounts or not), 17% stated to a very large extent, 19% large extent, 21% moderate extent, 30% small extent and 27% indicated not at all. The above assertions suggests that unlike randomly picking suppliers to supply products, a selection criterion is cardinal and affects supply chain positively as SMEs pick suppliers with cost effective products, quality products, good terms of service, good business history and many more that have a huge bearing on the supply chain as well as consumer satisfaction. These findings of the current study are in line with what Li (2006) found to say assessment of supplier's quality and service capabilities have a positive impact on the supply chain and customer satisfaction.

Further, more studies such as those done by Stanley and Wisner (2001) who surveyed several industries and suggested that quality and on-time delivery are the most important attributes of selection criteria that affect supply chain. Wang and Che (2007) also echoed this by suggesting that apart from optimum cost, trust, supply chain management, quality and communication were also important in supply chain. He further suggested that the suppliers' history of supply, production price, technical capability and transportation cost

also play important role during suppliers' selection and eventually have a bearing on the supply chain.

O'Brian and Ghodsypour (1998), agreed that cost, quality, and service that are the most important factors in supplier selection process and without them, the supply chain is negatively affected. Therefore, it is important to note that cost and quality dominated more in the supplier selection process. The authors also state that in the supplier selection process, a data bank containing an authorized list of suppliers with their profiles is crucial. Important information should include technical capability, quality assessment and organizational profile of suppliers.

Further, the interviews also brought out results on the on the following effects of selection criteria and how affect the supply chain. From these results, it can be noted that most respondents acknowledged the role that all these selection criteria play in the supply chain.

Field data shows most responses leaning towards agreeing that indeed selection made based on prices affect the supply chain. A respondent interviewed indicated that when prices of goods are low or moderate, they can buy the product and have the product in store while the supplier keeps supplying due to flexibility of agreements hence this affects the supply chain positively. The results also show however that when prices of supplier products are high, they are sometimes unable to negotiate and buy hence affecting the supply chain negatively. Several respondents attested to this fact by stating that higher priced bidding suppliers are usually not easy to negotiate with and hence time is wasted in the process and affects supplies negatively.

These findings are like what other studies have found. A study done by Mwikali and Kavale (2012) who stated that every company desire to get goods or products at a lower price to maximize profitability and keep the business running. The company therefore always aim to find a low-cost supply base where it can minimize manufacturing cost related to the production of the Product. Basically, price containment leads to supplier attractively.

On how the selection of suppliers based on quality of goods affect supply chain, results from the current study quality are one of the critical things that affect supply of goods. A

Mr. Mulenga (not real name), indicated when interviewed that *“one of the critical selection criteria is an assessment on the quality of products that the supplier has.”* This was indeed evident for all the other respondents interviewed who indicated that when the quality of supplier products is good and of high standard, SMEs are impressed and are excited to buy hence positively affecting there are products needed on the market and positive supply. On the other hand, some respondents stated that when the quality of goods is low, SMEs are usually hesitant to buy hence negatively affecting the supply chain.

These findings have also been found by other scholars who have top ranked quality of products as a parameter for selecting suppliers. Cheraghi et. al. (2011) conducted a study among many managers to examine how they reach compromise when selecting suppliers. Their research indicated that managers place highest priority to quality as the most important attribute of suppliers, followed by delivery and price.

Results on how product features are a factor in the selection criteria presents a rather balanced view from respondents. They show that while more half of the respondents acknowledged the importance of product features and packaging in selection of suppliers, field data indicate that this is not of very prime importance. However, it can also be noted from the results that the other half of the population interviewed argued that for every product, its features and packaging is very important and appealing to customers. Hence, Most SMEs are more likely to buy products that are well packaged and have features that suit the business. They therefore stated that when the products are not well packaged and its features not what they need, they are unlikely to select such suppliers and hence negatively affecting the supply chain as they would have wasted time on such a supplier.

Another important factor is the delivery of goods. The results indicate most respondents stating that this is a very important element in the supply chain. Most respondents stated that delivery of goods on time made things and flow of business easier. This also shows that delay in deliver resulted in slow sales and loses. Studies like one done by Liao and Kao (2011) emphasizes that the failure of suppliers to fulfill the promises and expectations regarding delivery is one of the three main sources of uncertainty plaguing the supply chain

Inventory holding time is one of the most important aspects of the selection process and the supply chain. Results for the current study show a divided response rate. Half of the respondents were of the view that this factor is not very important in the selection process while the other half strongly argued that it was important as some of the parameters of selection depended on this to work. One respondent even indicated that the inventory plays an important role in the supply chain as it acts as a firm or company acts with a few inventories in cutting down costs as reduced flow time is an advantage to the supply chain. Research on this has acknowledged that an important role of inventory is increasing the demand that can be satisfied by having the product available when the client wants it (Felea, 2008).

One other factor that needed to be looked at was the demand of product by consumers and how it was one of the factors affecting supply chain through selection criteria. Asked on how this factor influenced the supply chain, almost all the 45 respondents indicated that for them to buy a product, it was supposed to be marketable and on demand by consumers. This therefore meant that for suppliers to be selected, their kind of grain protectants must be on demand. Respondents therefore stated that having suppliers with products that were not on demand affected the supply chain negatively as SMEs were left to lengthen the selection further. With regards brand association, respondents were asked to state the extent this factor can affect the selection of a supplier by an SME. More than half, 75% or three quarters of the respondents stated that brand strength, association and name was cardinal in the selection of suppliers. The respondents stated that the stronger the brand association, the more likely a supplier was to be selected. Even more so, majority of respondents indicated that a good brand name or reputation is attractive to consumers hence putting the product on the spotlight and thereby increasing demand and positively affecting supply chain.

On return policy, respondents were asked to state how this factor affects the supply value chain and how it is important to consider it in selection criteria. All the 45 respondents stated that the selection criteria are highly affected by the return policy as most SMEs didn't not want to risk their businesses in-case they were faulty. They stated that suppliers with this policy and that was well outlined and reasonable were most likely to be selected

for supply of grain protectants. Further, all the respondents stated that without such policies, a company may get goods that are not needed by consumers and might not for instance be returnable within a specified time hence affecting the supply chain negatively

5.3 Challenges SMEs face in selecting Suppliers of grain protectants In Lusaka district.

There are several challenges that were stated by SMEs that they face in their quest to select suppliers that are capable of supplying quality grain protectants. However, field data indicate that most of the mentioned requirements that may be part of the selection process were not a challenge to them. This is true with regards to the results presented in table 6 in chapter 4 above which shows that time management and identifying quality service during selection, predominantly accounted for over 90% of the population stating that these were not a challenge for them. On assessment of supplier's technical capacity to supply, the results of the study indicate that unlike time management and identification of quality service, assessment of supplier's capacity to supply is very challenging as seen from table 6 in chapter four above.

Further, the results also indicate that obtaining supplier's information was never a challenge. This was evident with most respondents who stated so. It can also be seen that almost all the respondents, 89% and 11% said it was not challenge for them to have knowledge of selection criteria and procurement standards. This can mainly be attributed to the fact that every SMEs must be equipped with information on how the selection criteria is conducted. The results also show that on how difficult or selection is either easier or a challenge with regards issues of financial and collateral strength. This is noted from how less than 50% of the respondents who said it was a challenge and about 42% stating it was moderately difficult while only 15% said it was easier to select based on these two elements. Finally on supplier requirement or terms, more than half, 65% stated it was a challenge, giving the impression that sometimes the key to select a supplier lies on the terms of the supplier themselves and if the SMEs does not meet these terms, there will be no selection of such a supplier. Only a few respondents stated otherwise.

The findings above are in line with Hou and Su (2007) who suggested that identification of quality service is not a challenge as there are mechanisms set or put in place like the

quality index that integrates technical and design level, ease of repair and reliability. This they said clarifies what quality means. Further, studies have also shown that getting supplier's information and background or history is not a challenging venture as SMEs use every available source such as supplier past records and the supplier's overall desirability (Ware, Singh and Banwet, 2012). And on financial and collateral constraints as a barrier of supplier selection, studies have shown that most SMEs face challenges when suppliers' terms are not met.

On whether it is a challenge to get track with financial management of suppliers and record keeping in the selection criteria. All 45 respondents interviewed stated that this was never a challenge as the selection criteria stipulates this as one of the records that suppliers need to present before being selected and hence makes it easier for SMEs

On identifying quality service offered by these suppliers, all the respondents stated that identifying quality service offered by suppliers was never a challenge as all supplier that would be selected were scrutinized fully by engaging all parameters in the selection criteria.

This involved asking respondents whether they found it a challenge to assess supplier's capacity to supply grain protectants. Interestingly, majority of the respondents stated that it was a challenge as all suppliers' pledge to have these products in place and show willingness to supply at any given time. However, a few respondents stated that the selection criteria extend to scrutinizing supplier's history of supply with regards the commodity of other.

On obtaining crucial information history of supplier as one of the cardinal elements useful to the selection process. All the respondents, 45, indicated that they don't have this as a challenge because it is mandatory in the process and is obtained mostly through records on supplier. Although it is mandatory, some however still stated that not all information is obtained.

On financial strength and collateral being a constraint of successfully selecting and meeting some of the demands of the suppliers, half, about 22 respondents had a uniform answer of stating that sometimes it is difficult to select suppliers due to financial and

collateral strength as a business entity. However, a half of the respondents indicated that they were always prepared to meet most of the suppliers' demands even before engaging them. This also was true for any other supplier requirements that needed to be sorted before a conclusion on selection is reached.

5.4 Factors affection selection criteria and supply value chain

The factors that affect selection criteria and eventually have a bearing on supply chain were inventory holding time, delivery systems, market support, quality assessment, brand strength and return policy. Field data as presented in chapter for in table 7 above indicate that the four factors had a positive significant relationship with supply chain. This is also evident from the inferential statistics presented in table 8 of chapter four which shows a positive relationship between selection criteria and supply chain with a p-value ($P < 0.05$) and ($r = 0.575$). The interpretation of these findings is that an improvement in the selection criteria of suppliers of grain protectants through quality inventory holding time, delivery systems, market support, and quality assessment results in improved supply of grain protectants among SMEs.

Previous research has shown similar findings on the three factors. For instance, a study done by Meng (2006) indicates that Effective inventory holding time management will optimize the supply chain, eliminate cash flow, and reduce the possibility of occurrence on inventory shortage caused by variable orders. Consequently, it is of utmost importance to optimize inventory management to satisfy the company's strategy goal. And according to Mwikali and Kavale (2012), the ability of the supplier to follow the predefined delivery schedule is always the prime criteria for selection in this fast-moving world. This means that suppliers who keep their promises are easier and profitable to work with because the supply chain is not negatively affected. Further, the authors state that quality assessment is cardinal factor as it improves quality and maintains delivery performance.

5.5 Chapter summary

The goal of chapter five of this report was to examine the research findings in detail. The discussion was based on the findings' presentations in chapter 4, which used tables, charts, and graphs to provide in-depth explanations of the findings. The chapter focused

on talks of descriptive and inferential statistics that provided a thorough examination of how each independent variable affects the outcome variable (Supply Chain). As a result, it is clearer how the study's overall goal would be achieved. However, the last chapter (chapter six) will include recommendations that are in line with the study's findings and research aims.

CHAPTER SIX

CONCLUSION AND RECOMMENDATIONS

6.0 Introduction

In this final chapter of this study, a conclusion that are based on the research findings and are in line the research objectives and questions. The chapter further gives recommendations that relate to the gaps with regards research findings.

6.1 Conclusion

Based on the findings, it is therefore concluded that indeed suppliers need to have affordable pricing for the products, quality service, must have a delivery system that is effective, good terms of service and have products readily available for them to stand a chance of being selected. It can also be concluded that cost of supplier product (cost criteria selection), inventory holding time, quality assessment and delivery systems are the factors that mostly affect supply chain through selection criterion that has a positive significant relation with supply chain. This was evident from the values of ($r=0.575$; $p<0.05$) in the Pearson correlation coefficient analysis model.

6.2 Recommendations

In line with the findings of the study, the following recommendations are therefore have been made.

As research findings have revealed, an effective selection criterion encompasses different procedures and elements to select better suppliers that would not negatively affect the supply chain. Therefore, these recommendations are meant to give alternatives that best suit this description of a selection criteria.

- Firstly, a selection criterion on suppliers should be very open, transparent and encompass all the criteria that meet the standards of selection to thoroughly and in detail identify salient and the most important and needed aspects of suppliers.
- One cardinal element that came out as a challenge is obtaining supplier information and although most respondents stated that records are used in obtaining such

information, the nature of supplier selection must be done but experts who are knowledgeable and have needed expertise to conduct such an important exercise professionally.

- To identify the best suppliers using such a selection criterion, all departments in an organization, i.e., SMEs in this case need to be incorporated in the process to select the best qualified suppliers.
- It can also be recommended further that basic criteria list of suppliers can be useful in finding the right suppliers to develop health relationships with suppliers.
- Lastly one key element that seemed to be missing was the features that should meet the needs of the business that also present solutions to solve supply problems.

6.2.1 Recommendations for further study

While the current study provides valuable insights on the effect of selection criteria of suppliers on supply chain, it is important to provide limitations for future opportunities for research on the topic. Firstly, this study was based on research results of only 50 SMEs therefore the small sample size in a way limits the generalization of study results. It is important therefore that future research on supplier selection can think of sampling a larger population to have better study generalizations. Further, future studies should consider widening their research on supplier selection by including other populations other than strictly focussing on SMEs. Thirdly, the study asked respondents to use a five-point Likert scale in answering and rating all the aspects relating to selection criteria of suppliers. However, it is important to realize that there is a difference between what SMEs believe is important for supplier selection and how they execute their strategic supplier selection and evaluation. Therefore, future research should investigate issues of misalignment through doing comparisons of firm's perception of importance selection of suppliers and to what extent these practices are put into actual use.

6.3 Study summary

The purpose of this study is to evaluate the impact of the selection criteria that SMEs in the Lusaka area used to choose grain protectant suppliers. The problem statement and the study objectives were clearly established in chapter one, which also provided an overview of the study's history. On the other hand, chapter two concentrated more on

discussing secondary data and reviewing literature written by various writers that related to the topic of the current study. In Chapter three, the study methodology, including the procedures for gathering and analysing data, was further explained. This methodology was helpful in collecting the research findings and the much-needed information. The results of the analysis were reported in chapter four along with brief summaries of the findings. The last two chapters, five and six gave a thorough discussion of results and conclusion respectively in relation to research results.

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APPENDICES

Appendix 1

QUESTIONNAIRE

The questionnaire has been created to get information that will help in understanding the effects of criterion used in selecting suppliers of grain protectors by SMEs in Lusaka district. You are kindly being asked to voluntarily participate in helping answer this questionnaire as honestly as possible. All the information given by you will be kept confidential and used only for the purposes of this academic exercise. You however are requested not to provide your name and other information that will reveal identity. Be assured that there is no incorrect answer but what is deemed appropriate for you. You are also free to decline answering this questionnaire if you feel so. Your help will be highly appreciated.

Section A: Demographic characteristics of respondents

Please **tick** (✓) the answer deemed fit in the spaces provided.

1. Sex

Male

Female

2. Age Range

Below 20 years old

21-30 years old

31-40 years old

41-50 years old

Above 50 years old

3. Level of Education

Master's Degree

Post Graduate Diploma

- Bachelor's Degree
- Diploma
- Certificate
- Secondary Education
- Other, specify.....

4. Occupation/Not Limited to one

- Sales Agronomy
- Cashier
- Director
- Procurement officer
- Other, specify.....

Section B: The Relationship between criteria used in the selection of suppliers by SMEs and the supply value chain.

Please tick (√) the appropriate number in the space provided

(5=Excellent, 4=Good, 3=Average, 2=Not Satisfactory, 1=Poor)

5. What rating would you give each of the following selection criterion that suppliers must meet to get selected or not in the supply of goods and services to you as a business?

Selection criteria	5	4	3	2	1
Price of their products					
Product features and packaging of products					
Delivery of goods on time					
Relationship Management					
Availability of products					

Terms of the service					
Types of services offered					
Brand strength					
Extra incentives and discounts					

6. What rating would you give to each of the selection criteria on how they affect the supply chain using the scale below?

(5=Very Large extent, 4=Large extent, 3=Moderate extent, 2=Small extent, 1=Not at all)

	5	4	3	2	1
When prices are high or low?					
How are the product features designed and the packaging?					
The delivery system of the supplier?					
How both parties manage their relationships?					
Availability of products?					
How the terms of service of supplier are?					
What type of services offered?					
How strong or weak the brand is?					
If the supplier offers extra incentives and discounts or not?					

7. What rating would you give selection criterion as an effective tool for a sustainable supply chain for SMEs?

5	4	3	2	1

8. What rating would you give the selection of suppliers at random as opposed to using a systematic criterion?

5	4	3	2	1

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9. How would you rate the following as factors that affect selection of suppliers in terms of the degree of affection?

(5=Very Large extent, 4=Large extent, 3=Moderate extent, 2=Small extent, 1=Not at all)

	5	4	3	2	1
Inventory Holding time					
Differences in price offers to					
Quality Assessment					
Organizational goal					
Delivery system					
Demand					
Marketing support					
Ease of use of product					
Brand Association					
Return policy					

Please tick (√) the appropriate number in the space provided

(5=Very Important, 4=Important, 3=Average, 2=Not Important, 1=Not considered)

10. Rate the following types of criteria in ORDER of importance and determination of choice of criteria?

	5	4	3	2	1
Price of Products					
Product features and packaging					

Delivery systems of supplier					
Relationship Management					
Availability of products					
Terms of service					
Types of services offered					
Brand Strength					
Extra Incentives and discounts					

Please tick (√) the appropriate number in the space provided

(5=Very difficult, 4=difficult, 3=Average, 2=Not difficult, 1=Easier)

11. What rating would you give to the following challenges faced by SMEs in criteria of selection in terms how they deal with each with regards to difficulty?

	5	4	3	2	1
Time Management					
Identifying quality service					
Assessment of supplier's technical capacity to supply					

Obtaining crucial information on supplier					
Financial management and record keeping					
Having numerous erratic supply					
Lack of Knowledge of selection criteria					
Procurement standards					
Accounts statements from suppliers					
Financial strength and collateral of SMEs					
Supplier requirements/terms					
Audit requirements					

12. Do you feel this selection criterion has captured all necessary selection criteria that must generally be considered in supplier selection?

- (a) Yes
- (b) No

If your answer is no, please specify which other selection criterion can best be used and rate it according to the 5-point Likert scale.

Thank you for participating in this questionnaire. Your honest responses to the questions above are truly valued.

Appendix 2: Interview guide

Q1. Do you think the selection criterion that you use in select suppliers is effect and makes it possible for suppliers to meet the requirements on merit?

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Q2. Based on your experience, how does the following benchmarks of selection criteria affect the supply chain?

i) When the quality of goods and services are good, moderate, or bad?

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ii) When prices of goods are high or low?

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iii) When the product features and packaging is good or bad?

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iv) When the delivery of goods is on time or not?

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v) When the relationship management is good or not?

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vi) When products are available or not?

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vii) When terms of service are good or bad?

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viii) Depending on What type of services offered?

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.....

ix) When the Brand is strong or not?

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.....

x) When supplier offers extra incentives and discounts?

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.....

Q3. Based in your experience, what do you think of a systematic selection criterion that you have in place? Is it better to have it or you prefer picking suppliers at random?

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Q4. To what extent do you think the following factors affect selection criteria of suppliers?

i) Inventory holding time.....

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ii) Differences in price offers.....

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iii) Quality assessment.....

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iv) Delivery system.....
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v) Ease of use of product.....
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vi) Organizational goal.....
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vii) Demand of product by consumers.....
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viii) Marketing Support.....
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ix) Brand association.....
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x) Return Policy.....
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.....

Q5. How important do you think it is for a selection criterion to put into consideration the following elements before selecting a supplier?

i) Quality and on-time.....
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ii) Optimum cost.....
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iii) Culture.....
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iv) Supplier history of supply.....
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v) Technical capability.....

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Q6. How challenging do you think it is in selection criterion of suppliers is in terms of the following?

i) Financial management and record keeping

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ii) Identifying quality service in suppliers.....

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iii) Assessment of supplier's capacity to supply products.....

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iv) Obtaining crucial information on the supplier.....

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v) Lack of knowledge on selection
criteria.....

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.....
vi) Financial strength and collateral of
SMEs.....

.....
vii) Supplier
requirements.....

.....
**Thank you for creating the time to participating in this interview. Your responses
are highly valued. Enjoy the rest of your day.**

Appendix 3

List of Tables

Table 1: Gender

Gender	Frequency	Percentage%
Male	38	76
Female	12	24
Total	50	100

Table 2: Age

Age in Years	Frequency	Percentage %
Below 20	2	4
21-30	16	32
31-40	18	36
Above 40	14	28
Total	50	100

Table 3: Level of education

Level of Education	Frequency	Percentage %
Secondary only	1	2
Certificate	2	4
Diploma	13	26

Post graduate Diploma	2	4
Bachelors' degree	21	42
Master's Degree	11	22
Other, specify	0	0
Total	50	100