# SUPPLY CHAIN MANAGEMENT AND PERFORMANCE OF FLORICULTURAL FIRMS IN UGANDA: A CASE STUDY OF WAGAGAI LIMITED

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**A DISSERTATION SUBMITTED TO THE SCHOOL OF BUSINESS ADMINISTRATION IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF PROCUREMENT AND LOGISTICS MANAGEMENT OF NKUMBA UNIVERSITY**

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## Declaration

I hereby declare that this dissertation titled: *Supply chain management and performance of floricultural firms in Uganda: a case study of Wagagai Limited;* is my original work and has not been published or submitted for any degree award to any other University before. Where the work of others has used due acknowledgement and referencing has been given.

Signature: ……..  Date: ……

**Katuura Dedan**

## Approval

This is to certify that this dissertation by Katuura Dedan has been submitted with my approval as the Supervisor.

Signature: …….  Date: ……

**Mr. Bukenya Peter**

## Dedication

I dedicate this work to my children: Joshua and Caleb and family members.

**Acknowledgements**

Acknowledgement is made of the Almighty God for enabling me do this research and complete my course. Without His will and provision, this may not be a reality.

Second, my supervisor Mr. Bukenya Peter for his guidance, constructive criticisms and accommodating personality to the pressures raised by the schedules of my research meetings with him.

I also acknowledge my supervisor and colleagues at work for cooperating where this research has so far demanded time off work, and all those that so far have had a significant contribution directly or indirectly in conducting this research.

I am also thankful to the management and employees of Wagagai Limited.

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## Acronyms

| | | |
|---|---|---|
| ILM | - | Integrated Logistics Model |
| ISM | - | Institute of Supply Management |
| LPs | - | Logistics Processes |
| MPs | - | Marketing Practices |
| RBT | - | Resource Based Theory |
| SCM | - | Supply Chain Management |
| SCO | - | Supply Chain Optimization |

## Definition of Key Terms

According to Mckinnon *et al*, (2010), **floriculture** is a discipline of horticulture and it includes cultivation of flowers and ornamental plants for selling or for use as input materials in cosmetic industry as well as in the pharmaceutical sector.

A **supply chain** refers to a range of coordinated value-adding activities required to bring a product or service from conception, through the different phases of production and distribution, to end users (Van Duren and Sparling 1998; Woods 2004; Fearne, 2009). A supply chain is that network of organisations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customer or consumer (Lysons and Farrington, 2006).

According to Lysons and Farrington, (2006) **supply chain management** is described as the integrated approach to planning and controlling the flow of materials from the suppliers through the distribution channels to the end user. It emphasizes the management of upstream and downstream relationships and the law of supply chain optimization in increasing customer value at the lowest cost. Porter and Kramer (2011) in close consent define supply chain management as the process of integrating, planning, sourcing, making and delivering a product, from raw material to end customer, and measuring the results globally.

Gordon (2004) asserts that **performance** is subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. Organizational performance refers to how well an organisation achieves its market oriented goals as well as financial goals (Verbeeten & Bonns, 2009). Performance is thus assessed in terms of provision of better services, quality goods, increased efficiency, accountability and increasing the level of customer satisfaction.

## Abstract

The study sought to examine the relationship between supply chain management and export performance in the floriculture sector with a case study of Wagagai Limited. The study was guided by the following objectives: i) to evaluate the relationship between logistics processes and the performance of Wagagai Limited; ii) to establish how supply chain optimization practices have enhanced the performance of Wagagai Limited; and iii) to examine the extent to which marketing practices have influenced the performance of Wagagai Limited. The study adopted a phenomenological approach, cross sectional survey and case study strategy, both quantitative and qualitative methods to data collection and analysis. A sample of **86** was used for the study with *purposive*, *census* and *simple random sampling* techniques used to determine the constituent elements. Adopted several data collection instruments to include; self administered questionnaires, interview guides, and documentary review checklists.

Findings revealed a strong positive relationship between logistics processes and performance of Wagagai Limited given **r** = 0.708 at significance levels **p** = 0.001 less than 0.05, a moderately strong positive relationship between supply chain optimization and the Performance of Wagagai Limited given **r** = 0.641 at significance levels **p** = 0.000 less than 0.05, and a strong positive relationship between marketing practices and the performance of Wagagai Limited given **r** = 0.752 at significance levels **p** = 0.001 less than 0.05. The study concluded that there a moderately strong positive relationship between supply chain management practices and performance of floricultural firms. Since all these were attained at sig. values less than 0.05, the null hypothesis that there is no significant relationship between supply chain management practices and performance of floricultural firms was rejected and the alternative adopted.

The study on the relationship between supply chain management and the performance of Wagagai Limited gave rise to several recommendations applicable to the firms operating in floral supply chains including: need to improve integration and collaboration of logistics processes, packaging and labeling; address inefficiencies in quality management systems; intensify production planning; establish demand and supply certainty; need to move towards establishing a flexible marketing system; and intensifying market research in order to have improved performance.

# CHAPTER ONE

# INTRODUCTION

## 1.1 Background to the study

The study sought to examine the relationship between supply chain management and export performance in the floriculture sector with a case study of Wagagai Limited. Today, the floriculture industry is a growing industry in the World. The present day floral industry is one of the most dynamic and fast growing industry, which has achieved significant rate of growth during the past few years and has extended worldwide with the major paradigm shift of production centers from developed to developing countries (Ruud and Nicho, 2014).

The production and export of floricultural products have received a considerable interest in recent decades from the researchers, policy makers, agricultural and horticultural experts. It is often argued that horticulture and allied activities have to be given importance in view of the field's potential in employment, export and income generation. On this background, horticulture has been provided additional interest in recent years (Mckinnon *et al*, 2010). However, in Uganda, most regions are not in this process. This may be due to lack of infrastructural facilities, guidance to farmers by the relevant ministries, geographical constraints as well as unsuitable weather conditions.

Like other countries, Uganda is also interested in emerging as an important production base for floricultural output. Irregular climatic conditions, genetic variety, versatile human resources put Uganda in a unique scope for enormous employment of existing resources and exploration of avenues yet untouched. Further, after attaining significant progress in other agricultural sectors, focus is being directed more towards remunerative crops and export potential crops. One of the

emerging sectors in horticultural sector is floriculture. This sector has been encouraged, because of its demand both in domestic markets but predominantly the world markets.

In the past four decades, the handling and marketing of cut flowers in the United States and world over has undergone dramatic changes. The local production and specialized retailing of the 1950's has been replaced by a system where flowers produced almost anywhere in the world are largely sold by mass-market retailers. Despite a substantial increase in total sales of flowers during this period, and a considerable reduction in real dollar retail prices, per capita consumption of cut flowers is low compared to that in other major markets. This may partly be explained by differences in lifestyle and culture, but a major component of the low sales of cut flowers in the U.S. is customer dissatisfaction with quality, particularly vase life, of the flowers that they purchase, whatever the price. Poor vase life is the result of long transportation times, excessive storage durations, and poor temperature management in the supply chain (Reid, 2009).

According Reid (2009) mass markets have a great opportunity to alter the cut flower consumption pattern in the U.S. by demanding better postharvest handling of the flowers that they sell, and thereby providing high quality flowers with long vase life. Mckinnon *et al*, (2010) also add that, cut flowers have always had a place in the homes and culture of North America. Migrants from diverse backgrounds brought their traditional floral crops along with their fruits and vegetables to North America, and home and market gardens, from the earliest European settlement, included ornamentals as well as food crops. In the 19$^{th}$ early 20$^{th}$ centuries, commercial flower production was on the outskirts of the cities and flowers and plants were sold locally.

Reid, (2009) further notes that, although fruit and vegetable production moved West in the early 20th century, spurred by the near-perfect climate, fertile soils, and abundant water supplies in California and the availability of refrigerated railcars for transcontinental shipment, flowers didn't follow, because of their high perishability. It wasn't until after World War II, when the high lift capacity of the WWII bombers was converted to civilian use that the flower industry moved to cover vast areas of America. A similar trend took shape in many other western countries and gave rise to the increased importance of transport and storage as well as need to management quality of flowers to satisfy the emerging customer markets. In the 1990's and into the 21st century economic pressures, coupled with attractive real estate opportunities for growers located nearby the rapidly growing cities resulted in closure or re-location of many nurseries and a down-turn in production. However, the marketing of cut flowers has evolved substantially from the early days of the 20th century.

According to Mckinnon *et al*, (2010), floriculture is a discipline of horticulture and it includes cultivation of flowers and ornamental plants for selling or for use as input materials in cosmetic industry as well as in the pharmaceutical sector. This sector, according to international trade classification, encompasses (a) bulbs, tuberous roots and tubers (b) other live plants (c) cut-flowers and flower buds, dyed, bleached, fresh dried, impregnated or otherwise prepared, and (d) foliage, branches and other parts (other than flowers and buds) of bushes, mosses, trees shrubs and other plants lichens and grasses, being goods of a kind suitable for bouquets or ornamental purposes, bleached, dried, fresh, dyed, impregnated or otherwise prepared.

A supply chain refers to a range of coordinated value-adding activities required to bring a product or service from conception, through the different phases of production and distribution, to end users (Van Duren and Sparling 1998; Woods 2004; Fearne, 2009). A supply chain is that

network of organisations that are involved, through upstream and downstream linkages, in the different processes and activities that produce value in the form of products and services in the hands of the ultimate customer or consumer (Lysons and Farrington, 2006). And according to Porter and Kramer (2011), a supply chain covers the flow of materials, information and cash across the entire enterprise. It covers the interconnected set of business procedures and business parties that manage the flow and delivery of information from the point of design to the delivery of the product or service to the final consumer.

According to Lysons and Farrington, (2006) supply chain management is described as the integrated approach to planning and controlling the flow of materials from the suppliers through the distribution channels to the end user. It emphasizes the management of upstream and downstream relationships and the law of supply chain optimization in increasing customer value at the lowest cost. The interface between the operation and the first tier supplier, is the focus of traditional purchasing and supply management activity (upstream only), and the interface between the operation and the first tier customer is termed as physical distribution management (downstream only). Hence, supply chain management is the term used to describe the management and coordination of all the activities both upstream and downstream. Porter and Kramer (2011) in close consent define supply chain management as the process of integrating, planning, sourcing, making and delivering a product, from raw material to end customer, and measuring the results globally.

Gordon (2004) asserts that performance is subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firm's overall health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation.

Performance management can be measured by the quality of the work done, efficiency, effectiveness, commitment, profitability, cost reduction, reduction in variances among others (Bodnor, 1993). Organizational performance refers to how well an organisation achieves its market oriented goals as well as financial goals (Verbeeten & Bonns, 2009). Performance is thus assessed in terms of provision of better services, quality goods, increased efficiency, accountability and increasing the level of customer satisfaction.

The Institute of Supply Management (2006) notes that, metrics such as reduced expiries, order fill rates, reduced cost, reduced delays, improved stakeholder relationships, defect reduction, reduced integrity breach, etc may add to performance measures in specialized sectors. In the floricultural supply chains, the metrics of performance would include: production and operational efficiency, responsiveness to customer requirements, competitiveness of prices, quality assurance and integrity of floral products, meeting specifications, reduced operational costs, reliability, and on-time delivery.

There are theories and models that exist to explain, describe, understand and predict the relationship that exists between supply chain management and performance of floricultural firms. However, in this study, three theories i.e. the principal-agency exposited by Alchian and Demsetz (1972) and further developed by Jensen and Meckling (1976); the resource-based theory of the firm (RBV) put forward by Wernerfelt (1984) and subsequently popularized by Barney's (1991) work; and the stakeholder theory originated by Freeman (1984). These are supported by models of business management especially the integrated logistics model advanced by Rashton and Croucher, (1999) that are fundamental to establishing the link between supply chain management and performance of floricultural firms.

Agency theory defines the relationship between the principals, such as shareholders and agents or company executives and managers. The important assumptions underlying agency theory are that: potential goal conflicts exist between principals and agents; each party acts in its own self-interest; information asymmetry frequently exists between principals and agents; agents are more risk averse than the principals; and efficiency is the effectiveness criterion (Xingxing & Kaynak, 2012). Theory will be useful in explaining the relationship between the directors of Wagagi Limited, regulatory bodies pertinent to its operations and the managers in meeting the aspirations of directors, stakeholders and customers it intends to serve.

Unlike agency theory in which the managers are working and serving for the stakeholders, stakeholder theorists suggest that managers in organizations have a network of relationships to serve that include the suppliers, employees and business partners. According to Freeman (2002), each stakeholder is given an important say in making important decisions. The model depicts the stakeholders in a typical large corporation. The Resource-based theory emphasizes the importance of organization resources and, their influence on performance and competitive advantage in the market. The stakeholder theory is useful in the grounding the relevance of integrating processes and stakeholders throughout both the local and international supply chain of Wagagai Limited in order to achieve total logistics and supply chain optimization.

According to Resource Based Theory, every organization has its own unique resources that enable it to remain competitive in the market, by addressing the rapidly. This theory coupled the integrated logistics model is relavant in that it rationalizes the need efficiently and effectively resources in floricultural operations of Wagagai Limited in order to realise performance targets. The attainment of reduced cost, operational and production efficiency, effectiveness, market

competitiveness, inter alia require a focus on resource utilization in the floral supply chain and specifically achieving this through integrated logistics management approaches.

Modern supply chains are dynamic and interconnected networks that are gradually lengthening and globe-spanning (Christopher & Peck, 2008). The expansion and the internationalization of the supply chains translate them from the simply linear structures into an endless and complex system susceptible to disruption. According to Hendricks and Singhal (2011), disruptions in the supply chain at global level devastate corporate performance. East African countries have faced supply chain disruptions since the year 2007 (Omondi, 2011). The history of the export of fresh floricultural produce from East Africa dates back to the period before independence when Kenya, then a British colony, was required to contribute to the running of the budget for East Africa. Kenya's horticultural sector currently ranks as one of the economy's top industries, the third largest foreign exchange earner after tourism and tea. However, other East African countries have had a slow pace in the development of the floricultural sector (World Bank, 2010).

Wagagai Limited located on Plot 35, Lwaka - Kasenyi (Nkumba), Katabi Sub-County Busiro, Wakiso District Uganda, is one of the world's largest flower propagation companies of cuttings. It mainly produces begonias, chrysanthemums and poinsettias, but also many pot plant cuttings more. Based in the south of Uganda, it supplies several prominent European breeders and growers yet it is far more than just a propagation company. Wagagai's growth is partly due to its vision and entrepreneurship. Its business is completely based on balancing the three Ps: People, Planet and Profit. To obtain a balance of these efforts, Wagagai Limited has to streamline its supply chain management processes. However, it has suffered setbacks in its floral

supply chain with significant gaps in logistics, marketing, distribution, and optimization practices that have failed the realization of set performance targets.

### 1.2 Statement of the problem

Despite its lucrative position in the Ugandan economy, the performance of the floriculture sector has faced several challenges in the recent past. According to the World Bank (2010), floriculture accounted for 3.8 per cent of the shilling value of exports in 2009 making it the most important foreign exchange earners in Uganda. However, the supply chains in the floriculture sector display inadequate capability to consistently match supply with demand over the long term notwithstanding the prevailing productivity momentum (National Floricultural Survey, 2013). The Uganda floricultural supply chains have been unable to display consistency and stability in performance (World Bank, 2015). They have frequently experienced costly discontinuities and other sub-optimization issues in the current dynamic markets and vastly-changing technological environments.

According to Mckinnon *et al*. (2007) floricultural supply chains are inflexible and susceptible to disruption since they are unable to swiftly and suitably respond to emerging international protocols, certification requirements, and to governmental and regulatory changes. Logistics systems of floral production firms have failed to match the demands of the dynamic domestic and global markets (Ministry of Trade and Industry Report, 2014/2015). In particular, high cost and ineffective marketing and distribution have limited the performance of Wagagai especially in the global market (Market Performance Evaluation Report-Wagagai, 2016). These signs are symptomatic of supply chains typified by sub-optimization problems, logistics and marketing inefficiencies that will fail market competitiveness. Therefore, a study to examine the

relationship between supply chain management and performance of Wagagai was critical in the quest to identifying, manage and reverse the negative performance trend.

### 1.3 Purpose of the study

The purpose of the study was to examine the relationship between supply chain management and the performance of floricultural firms with a case study of Wagagai Limited.

### 1.4 Research objectives

The study was guided by the following objectives;

a) To evaluate the relationship between logistics processes and the performance of Wagagai Limited.
b) To establish how supply chain optimization practices have enhanced the performance of Wagagai Limited.
c) To examine the extent to which marketing practices have influenced the performance of Wagagai Limited.

### 1.5 Research questions

The study sought to answer the following research questions;

a) What is the relationship between logistics processes and the performance of Wagagai Limited?

b) How have supply chain optimization practices enhanced the performance of Wagagai Limited?

c) To what extent have marketing practices influenced the performance of Wagagai Limited?

## 1.6 Research hypotheses

The following were the hypotheses of the study;

**$H_{o1}$**: There is no significant relationship between logistics processes and the performance of Wagagai Limited.

**$H_{A1}$**: There is a significant relationship between logistics processes and the performance of Wagagai Limited.

**$H_{o2}$**: There is no significant relationship between supply chain optimization practices and the performance of Wagagai Limited.

**$H_{A2}$**: There is a significant relationship between supply chain optimization practices and the performance of Wagagai Limited.

**$H_{o3}$**: There is no significant relationship between marketing practices and the performance of Wagagai Limited.

**$H_{A3}$**: There is a significant relationship between marketing practices and the performance of Wagagai Limited.

## 1.7 The scope of the study

Defining the scope of the study is critical to setting the limits within which the study operates. Hence, the content scope, geographical scope, and time scope are given.

### 1.7.1 The Subject Scope

The subject scope of the study centered on supply chain management as the independent variable limited to the three constructs: logistics processes; supply chain optimization practices; and marketing and distribution practices of Wagagai Limited. The dependent variable is performance

of Wagagai Limited with the metrics of performance would include: production and operational efficiency, responsiveness to customer requirements, competitiveness of prices, quality assurance and integrity of floral products, meeting specifications, reduced operational costs, reliability, and on-time delivery. These constructs and metrics are considered because they are more linked to the context of the problem within Wagagai Limited. They were therefore adequate parameters to examine the relationship between supply chain management and performance of Wagagai Limited.

### 1.7.1 The Geographical Scope

The study was conducted at Wagagai Ltd located on Plot 35, Lwaka - Kasenyi (Nkumba), Katabi Sub-County Busiro, Wakiso District Uganda.

### 1.7.3 The Time Scope

The study considered the period 2013-2017 because it is the period in which supply chain management inadequacies noted to affect the performance of Wagagai Limited significantly.

## 1.8 Significance of the study

The study is of significance to;

i) *Wagagai Limited*: The study provides analytical and statistical information that may serve as guidelines for streamlining supply chain management practices that helps it realise the performance targets in the floricultural products market;

ii) *Supply chain managers*: It is beneficial for supply chain managers especially in the floricultural sector to aim at ensuring that the performance targets are delivered by their supply chain management practices of their firms;

iii) *Government and other stakeholders*: The study is of benefit to other stakeholders in the floricultural industry including government departments and ministries seeking to promote market effectiveness of floral products both in local and international markets;

iv) *Knowledge:* The study adds to existing knowledge and awareness in the areas of supply chain management in the floriculture industry; and

v) To *the researcher:* the study enables the satisfaction of the requirements for the award of the Degree of Master of Procurement and Logistics Management of Nkumba University.

### 1.9 Setting of the study

The study was based on a case study of Wagagai Limited which one of the most prominent flower propagation and production firms in Uganda and East Africa. It has an established supply chain that seeks to serve both local and foreign markets. Supply chain management has a significant impact on the performance of floricultural firms because without streamlined supply chain processes performance targets may be compromised. Good supply chain management practices improve production and operational efficiency, integrity and quality assurance, satisfaction of customer requirements and specifications. While poor supply chain management practices adversely affect the performance of floral supply chains (Mckinnon *et al*, 2010). Effectiveness of supply chain optimization practices is key to optimal performance in floral supply chains (Reid, 2009). Ruud and Nicho, (2014) also ground that integrated logistics processes are critical to the performance of floral supply chains.

### 1.10 Arrangement of the study

The study is organized in eight chapters followed by references and appendices.

**Chapter One:** titled as the Introduction, contains the background to the study, the problem statement, purpose of the study, research objectives, research questions, study hypotheses, the scope, significance and setting of the study.

**Chapter Two:** titled as the Study Literature gives a detailed review of supply chain management and performance of floricultural firms. It is structured as the literature survey, theoretical review, literature review, and the conceptual framework.

**Chapter Three:** this gives the Methodology of the research study including the research design, study population, sample size, sampling methods and techniques, data collection methods and instruments, content and reliability tests, data analysis and presentation, ethical considerations, and limitations to the study.

**Chapter Four** gives findings on logistics processes and performance of Wagagai Limited.

**Chapter Five** gives findings on supply chain optimization practices and the performance of Wagagai Limited.

**Chapter Six** gives findings on the extent to which marketing and distribution practices have influenced the performance of Wagagi Limited.

**Chapter Seven** gives harmonized findings on supply chain management and performance of floricultural firms.

**Chapter Eight** gives the summary, conclusion and recommendations of the study.

# CHAPTER TWO

# STUDY LITERATURE

## 2.1 Introduction

This chapter entails review of literature relating to concepts, theories, models and views on supply chain management and performance of floricultural firms. It highlights the gaps that this study intended to fill based on the review or survey of previous research work on the main variables of the study. These are advanced following a conceptual framework which is the basis of expanding the theory and literature of the study. Basically this chapter is based on review of views of different researchers, scholars, and other authorities giving the path along which the current study is conducted. According to Patton, (2002), a good literature review needs to indicate the different views, agreements, disagreements, and trends of thought on the topic of research and be accurately portrayed and acknowledged in the text. Hence a detailed study of the literature on supply chain management and performance of floricultural firms is critical to the current study.

## 2.2 Literature Survey

To identify the gaps any study intended to fill, a literature survey is necessary. However, limited research has been on floricultural supply chains. The studies that were conducted before that left gaps that the current study sought to fill are established in the works of Kangogo et al, (2013) and Kaijabwangu (2014).

Kangogo et al, (2013) carried out an investigation on the factors contributing to supply chain disruption in the floral industry in Uganda and used Rosebud Uganda Limited - Namulanda,

Wakiso District as a case study. The research applied descriptive survey research design and employed random sampling technique. The data collection was done with the aid of structured and semi-structured questionnaires containing relevant questions on the supply disruption phenomenon. The study found that the most significant amongst the factors contributing to supply chain disruption in the floriculture industry in Uganda are natural disasters, logistics process design, labor union actions and finally production function mechanics.

To address supply chain disruptions, the study recommended: implementation of comprehensive business continuity plans to mitigate against the supply chain effects of natural disasters, development of logistical process redundancies, formulation of creative policies to contain labor unions agitations and investment in research to develop resilient and scalable production function mechanics. Though the study yielded constructive recommendations, it ignored the assessment of standards and quality management systems in floral supply chains which are critical to effective operations in the market. It also ignored the focus on supply chain optimization and marketing processes to gain export edge in international floral supply chain. The need to bridge these gaps left was the center of the current study on supply chain management and performance of Wagagai Limited.

Kaijabwangu (2014) conducted a study on the challenges of the floriculture industry in Uganda. The research used a phenomenological and descriptive survey research design. It employed both non random and random sampling techniques. Data was collected using interviews and self administered questionnaires containing relevant questions on the challenges of the floriculture industry. The findings revealed that depression in pricing has been observed across the product

segments. The floriculture sector in Uganda is facing several challenges at the production level mostly related to availability of basic inputs, proper irrigation and skilled manpower. At the marketing stage major challenges related to product diversification and product differentiation. With increasing export of flowers managing transport is also becoming a critical factor for the Ugandan Floriculture Industry.

This study by Kaijabwangu attempted to analyse the overall information on floriculture as a part of horticulture, focusing on area, production and yield. It also tried to bring out the scope and dynamics of international trade in floriculture sector. However, it ignored the role of quality control systems, supply chain optimization, and marketing practices that are critical to performance in the export of floral products. The study also ignored measuring export and local performance of the floricultural sector from the micro point of view and instead focused on the aggregate export performance. It is upon these gaps that the current study on supply chain management and performance of Wagagai Limited was built.

### 2.3 Literature review

According to (Patton, 2002), a good literature review needs to indicate the different views, agreements, disagreements, and trends of thought on the topic of research and be accurately portrayed and acknowledged in the text. She further states that: A literature review needs to produce a conceptual framework, including philosophical stances and theoretical assumptions, key assumptions and theoretical problems or contradictions. (Amin, 2005) confirms that a literature review is a critical discussion of all significant, publicly available literature that contributes to the understanding of a subject. (Bryman, 2001) concurs with Oliver, Blaxter, Hughes, Tight, Stilwell and Pickard, in that a literature review involves the systematic

identification, location and analysis of documents containing information related to the problem under investigation.

### 2.3.1 The Floral Supply Chain Management Concept

According to Lysons and Farrington, (2006) supply chain management is described as the integrated approach to planning and controlling the flow of materials from the suppliers through the distribution channels to the end user. It emphasizes the management of upstream and downstream relationships and the law of supply chain optimization in increasing customer value at the lowest cost. Porter and Kramer (2011) in close consent define supply chain management as the process of integrating, planning, sourcing, making and delivering a product, from raw material to end customer, and measuring the results globally.

The interface between the operation and the first tier supplier, is the focus of traditional purchasing and supply management activity (upstream only), and the interface between the operation and the first tier customer is termed as physical distribution management (downstream only). Hence, supply chain management is the term used to describe the management and coordination of all the activities both upstream and downstream. Saxena and Sircar (2009) broadly classified the supply chain management (SCM) framework components into three parts: upstream, internal and downstream. The upstream supply chain is mainly concerned with procurement of raw materials, internal supply chain concerned with transforming inputs into outputs and the downstream supply chain concerned with delivery processes of the finished products to the final consumer (Bailey *et al.*, 2005).

Ruud and Nico, (2014) advance that; worldwide trade of ornamentals has increased over the last decade. This also means there is quite a bit of competition in supplying the markets. The markets and different type of outlets set the standard. Furthermore, their hosting countries and continents have their regulations. So if exporting product to other countries and continents is considered, the following has to be taken in to account: i) Disease free propagation material; ii) High level crop management; iii) Independent quality inspection; iv) Grading according to international standards; v) Flexible marketing system; and vi) Specialised outlets.

To deliver floricultural products free of disease, for producers it is important to start with healthy propagation material. Because southern countries have good climate conditions for producing propagation materials like seeds, cuttings it is interesting for European and USA growers to import this material. Because of phytosanitary measures in their countries and also their own growing results, it is important that this material is guaranteed disease free (Ruud and Nico, 2014). Therefore, for a flower propagation firm like Wagagi, it is important that its supply chain optimization processes embrace disease controls to produce disease free floral products that would effectively compete in the both the local and global market.

Ruud and Nico, (2014) further advance that, to be able to meet the demand and the arrangements made about amount of product, product quality, moment of delivery, it is important that crop management in floral supply chains should be of high level to assure this. Grading according to international standards is important to make the delivery accepted. And when propagation material or end products are inspected at borders or at the customers', the process will take shorter when it can be shown that it has been inspected by an independent quality inspection organisation in the exporting country. If these are, organisation working world wide like S.G.S., this will build trust. This kind of inspection also will assure the exporting party the product won't

be returned or destroyed. The integration of quality management in optimization practices of floral supply chains is a key component for success in especially global markets.

Floral supply chains need flexible marketing and distribution systems effectively deliver performance expectations (Ruud and Nico, 2014). In support of this, (Mckinnon *et al*, 2010) recognise that exporters will have to try to find different (types of) outlets for their produce. Each customer will have a different demand and different product specifications. The more the exporting company is able to play the customers with more different type of specifications, the higher the chance of being able to sell the produce.

According to Ruud and Nico, (2014), outlets try to build an image and to play target groups by marketing in floral supply chains. Floral propagation and production firms fill this in with their outlet buildings and locations, their product assortment and price setting contribute to this. When potential suppliers are able to strengthen this formula with their product and services, they will be welcome as a supplier. Next to that they can distinguish themselves from other suppliers to invest in this relation. Mckinnon *et al*, (2010) also advance that climate controlled storage and transport are integral component of floral supply chains. 'Due diligence' or 'do as you say' is extremely important when it comes to meeting the quality level agreed on. During the transport, the quality of the product will decrease. With a climate control focused on the physiological needs of the product, the process of deterioration will be slowed down. This will raise the chances that the product will arrive with the quality of the right level.

### 2.3.2 Performance of floricultural firms

Measurement of organizational performance is not easy for business organizations with multiple objectives of profitability, employee satisfaction, productivity, growth, social responsibility and

ability to adapt to the ever changing environment among other objectives (Waiganjo, Mukuru and Kahiri 2012). Although performance has been traditionally conceptualized in terms of financial measures, some scholars have proposed a broader performance construct that incorporates non-financial measures including among others market share, product quality, and company image (Obong'o 2009).

Gordon (2004) asserts that performance is subjective measure of how well a firm can use assets from its primary mode of business and generate revenues. This term is also used as a general measure of a firm's overall health over a given period of time, and can be used to compare similar firms across the same industry or to compare industries or sectors in aggregation. Performance management can be measured by the quality of the work done, efficiency, effectiveness, commitment, profitability, cost reduction, reduction in variances among others (Bodnor, 1993). Organizational performance refers to how well an organisation achieves its market oriented goals as well as financial goals (Verbeeten and Bonns, 2009). Performance is thus assessed in terms of provision of better services, quality goods, increased efficiency, accountability and increasing the level of customer satisfaction.

The Institute of Supply Management (2006) notes that, metrics such as reduced expiries, order fill rates, reduced cost, reduced delays, improved stakeholder relationships, defect reduction, reduced integrity breach, etc may add to performance measures in specialized sectors. In the floricultural supply chains, the metrics of performance would include: production and operational efficiency, responsiveness to customer requirements, competitiveness of prices, quality assurance and integrity of floral products, meeting specifications, reduced operational costs, reliability, and on-time delivery.

Davis in Lysons and Farrington (2006) suggests a number of actions that can be use d to improve supply chain performance and reduce vulnerability to demand uncertainty in both products and processes. For products, these actions include the use of standard components and sub-assemblies, lower tolerances, fewer product offerings and the production of generic products. For processes, typical actions may be to reward supplier performance, subcontract, inbound freight handling, remove bottlenecks, introduce self-managed work teams, and devise improved forecasting techniques. And at the strategic, tactical and operational levels, decision-making processes should be influenced by the search for supply chain optimization. These are issues that were central to the current evaluation of performance of floricultural firms as a consequence of supply chain management practices in floral supply chains.

### 2.3.3 Supply Chain Management and Performance theories

Realizing performance targets is a paramount concern of every enterprise's supply chain processes. Key elements like logistics processes, marketing, distribution, and supply chain optimization are driven by this concern. How supply chains are managed greatly impacts on the performance of floricultural firms like Wagagai Limited. The abstract link between management of floral supply chains and the performance of firms operating in the sector would be mythical than real if not backed by theories and models. Theories explaining the relationship between supply chain management and performance of floricultural firms including the agency theory, the stakeholder theory, and the resource based theory, inter alia.

Agency theory was exposited by Alchian and Demsetz (1972) and further developed by Jensen and Meckling (1976). The theory defines the relationship between the principals, such as shareholders and agents or company executives and managers. In this theory, shareholders who are the owners of the company, hire the agents to perform work. Principals delegate the running

of business to the managers, who are the shareholders' agents (Clarke, 2004). The Principal-Agent Theory explains how the actions of the agent affect the principal and other stakeholders for example making non optimal decisions as far as the utilization of financial resources and non financial resources are concerned (Muranda, 2006). Therefore, the theory is useful in explaining the relationship between the managers and supervisors in ensuring that Wagagai Limited complies with regulatory obligations to safeguard health and safety and also ensure that supply chain operations of Wagagai deliver expectations of directors and customers.

Stakeholder theory originated by Freeman (1984) is defined as "any group or individual who can affect or is affected by the achievement of the organization's objectives". Unlike agency theory in which the managers are working and serving the interests of owners or shareholders, stakeholder theorists suggest that managers in organizations have a network of relationships to serve that include the suppliers, employees and business partners. According to Freeman (2002), each stakeholder is given an important say in making important decisions. Business and executives who manage them should create value for customers, suppliers, employees, communities and financiers (Stieb, 2008). The stakeholder theory argues that it is important for the firm to pay special attention to the various stakeholder groups that are deemed to have a stake in the operations of a firm. The representation of all stakeholder groups across the supply chain management spectrum is therefore necessary for effective supply chain management (Gibson, 2000).

Further, the model depicts the stakeholders in a typical large corporation. The stakes of each are reciprocal, since each can affect the other in terms of harms and benefits as well as rights and duties (Freeman, 2002). Owners have financial stake in the corporation and expect returns. Employees have their jobs and usually their livelihood at stake. They have socialized skills and

in return for their labour, expect security, wages and benefits and meaningful work. The theory grounds the need for coordination and integration of all supply chain processes, logistics elements, parties, resources and activities in floral supply chains in working towards the optimal performance of floricultural firms like Wagagai.

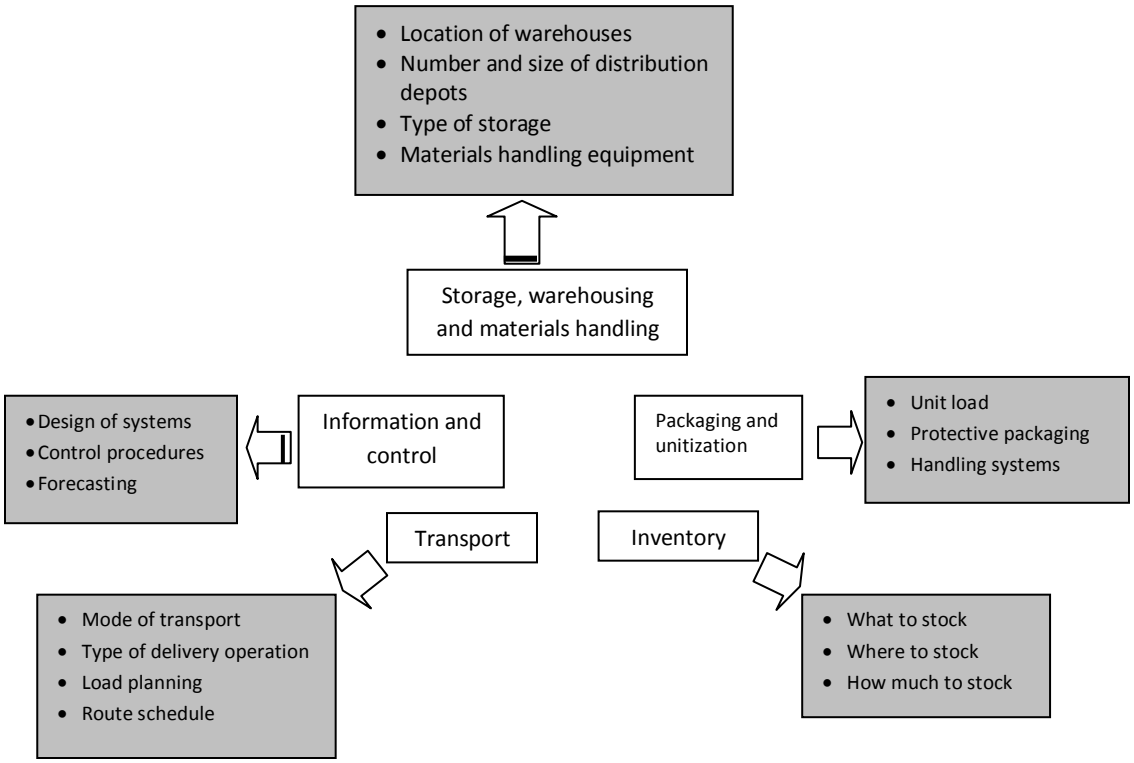
Penrose (1959) provided initial insights of the resource perspective of the firm. However, the resource-based view of the firm (RBV) was put forward by Wernerfelt (1984) and subsequently popularized by Barney's (1991) work. Many authors for example Eisenhardt and Martin (2000); Zollo & Winter, (2002); Zahra and George (2002); and Winter, (2003) made significant contribution to its conceptual development. Theory emphasizes the importance of organization resources and, their influence on performance and competitive advantage in the market. According to RBVT, every organization has its own unique resources that enable it to remain competitive in the market, by addressing the rapidly changing environment (Helfat, 2007). These resources may be financial, human, physical, technological and information, and they must be valuable, rare and non-substitutable (Crook, Ketchen, Combs and Todd, 2008). The effective and efficient utilization all these resources across floral supply chains is critical to achieving operational efficiency, cost reduction, market competitiveness and other performance aspects of floricultural firms.

### 2.3.4 Logistics processes and performance of floricultural firms

Logistics is the management of all activities which facilitate movement and the co-ordination of supply and demand in the creation of time and place utility (Hesket, Glaskowsky and Ivie, 1973). It is the positioning of resource at the right time, in the right place, at the right cost, at the right quality (Chartered Institute of Logistics and Transport (UK), 2005). Logistics management is the planning, implementation and control of the efficient, effective forward and reverse flow and

storage of goods, services and related information between the point of origin and the point of consumption in order to meet customer requirements (CSCMP, 2006).

**Figure 2.1**: The key components of logistics, showing some of the associated detailed elements




*Source: Rashton Allan and Croucher Phil, (2011)*

According to Rashton and Croucher, (2011), for most organizations it is possible to draw up a familiar list of key areas representing the major components of distribution and logistics. These will include transport, warehousing, inventory, packaging and information. This list can be 'explode' once again to reveal the detailed aspects within the different components. Some typical examples are given in figure 1.2. How these components are integrated in the floral supply chains to achieve desired performance of floral firms like Wagagai Limited was of critical importance to this study.

Rashton and Croucher, (2011) further advance that, logistics really looks at three types of movement: i*) Movement of raw materials:* where materials are moved from supplies *into* the organization. Here logistics is concerned with purchasing, inward transport, receiving, storage and retrieval of goods; ii) *Movement of work-in-process:* where materials are used *within* the organization. Here logistics looks at handling, movements and storage of goods during operations; and iii) *Movement of finished goods:* where materials are moved from the organization out to their customers. Here logistics looks at packaging, storage and retrieval from warehouses, shipping and distribution to customers.

Rashton and Croucher, (2011), add that sometimes it is convenient to break the logistics function into parts. Then *materials management* is responsible for the first two of these-movement of materials into and within the organization. *Physical distribution* is responsible for the third–the movement of finished goods out to customers. Unfortunately, there is some confusion in these terms as many people use the terms 'logistics', 'physical distribution' and 'materials management' to mean the same general function. Logistics controls the flow of materials through an organization on their journey from suppliers, through operations, and on to customers. But the final product of one organization is the raw material of another.

### 2.3.5 Supply chain optimization and performance of floricultural firms

Lysons and Farrington (2006) advance that; supply chain optimization is concerned with removal of non-value adding steps or processes in the supply chain. It is concerned with removal of supply chain inefficiencies. It is defined as the management of complicated supply chains in their entirety with the objectives of synchronizing all value-adding production and distribution activities and the elimination of such activities that do not add value. Embracing supply chain optimization practices in a complex floral supply chains is therefore imminent to achieve optimal

performance results for firms operating in such supply chains. Thus, is an aspect critical to the investigation on the relationship between supply chain management and performance of floricultural firms like Wagagai Limited.

Supply chain optimization emphasizes the importance synchronizing production and distribution activities, eliminating activities that do not add value, providing the highest possible levels of customer service, achieving cost effectiveness, achieving maximum productivity from resources expended or assets employed, optimizing enterprise profits, and achieving maximum time compression (Lysons and Farrington, 2006). This advancement is critically linked to the performance metrics of floral supply chains: production and operational efficiency, responsiveness to customer requirements, competitiveness of prices, quality assurance and integrity of floral products, meeting specifications, reduced operational costs, reliability, and on-time delivery. Therefore, evaluating the contribution of supply chain optimization to the performance of Wagagai Limited-a floricultural firm, is critical to this study.

According to Lysons and Farrington (2006), critical factors in supply chain optimization include: reduction of uncertainty; collaboration; benchmarking; key performance indicators (KPIs); and leadership. Uncertainties like production breakdowns, and lack of clear understanding of customers of floral products may fail performance floricultural firms. As advanced by the principal-agent theory and the stakeholder theory, leadership and collaboration respectively, highlight the role of firm leadership and integration of stakeholder efforts and logistics processes is critical to successful performance of firms in floral supply chains. And as a way of improving supply practices and keeping track of their performance, floricultural firms need to benchmark and set key performance indicators if supply chain management practices are to deliver optimal performance in the floriculture industry. Hence, an investigation of this is central to this study.

### 2.3.6 Marketing practices and the performance floricultural firms

According to Kotler (2004), marketing is defined as a social and managerial process by which, individuals and groups obtain what they need and want through creating and exchanging products and value with others. Marketing can also be defined as process of planning and executing the conception, pricing, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives." Marketing is a key factor to business success. The marketing function not only deals with the production and distribution of products and services, but it also is concerned with the ethical and social responsibility functions found in the domestic and global environment. Marketing is: *i)* creating customer value and satisfaction are at the very heart of modern marketing thinking and practice; ii) a very simple definition of marketing is that it is the delivery of customer satisfaction at a profit; and iii) sound marketing is critical to the success of every organization. The adoption of effective marketing practices in floral supply chains is critical to its performance.

According to Gillingham (2007) segmentation of customer markets is critical to optimizing marketing efforts in floral supply chains. In local customer segments supply-chain relationships can be easy, given existing personal relationships between growers and florists. However, it was also reported that personal relationships could compromise business relationships at times, resulting in broken supply. The profitability of flower arrangements and flower products depends on the number of shared special occasions in a year and the popularity of a high-quality service that prevails. On shared special occasions, the price of flowers/plants and flower products is twice or three times the normal price. Regarding service, business may prosper and expand as a result of preferred supplier status, or favoritism, by business houses and government bodies.

Ruud and Nico, (2014) in support of Gillingham's view advance that in terms of supply-chain strategies by growers for this market segment, a high level of operational efficiency, or high push strategy, may be needed because most of their customers buy for commercial reasons. For the level of responsiveness to customer needs, a moderate pull strategy rather than a low pull strategy, as in local consumer segment, is called for. This is because florists are now regular, identifiable customers of growers.

According to Ruud and Nico, (2014) local consumer segment generally patronizes shows, festivals and roadside stalls. For new floricultural growers, taking products to these venues is a low-cost test-market practice and an opportunity to interact with customers directly. For those who have other channels through which to sell, this channel is an outlet to make extra income. In terms of supply approach for this market segment, it is impractical for growers to cater for customer needs at all times, given a wide spectrum of customers in this marketing channel. A combination of moderate push and low pull strategies can be adequate. A moderate, rather than low, efficiency strategy is needed because this segment expects competitive prices. A low responsiveness strategy will be satisfactory because customer needs are divergent.

Cross regional business-customer segment is an up-market customer segment in POM. Like the second segment above, these customers also buy products for commercial reasons to add value or to sell at their shops. Ideally, only superior-quality flowers with few or no defects and long vase-life potential should be sent to POM. This customer segment demands relatively efficient production and a high level of responsiveness through intimate knowledge of customer requirements (Ruud and Nico, 2014).

Ruud and Nico, (2014) further add that, an integral part of effective marketing in floral supply-chain is good business practices, such as reliability and delivering on time to the consolidation depot. Supply-chain strategies for this market segment should be of high operational efficiency in order to offer high-quality products with competitive prices to cross-regional business customers. One reason is that some local chains in POM provide similar products. Hence, the business customers are more price sensitive than in the first two segments**.** A high level of responsiveness to customer needs is needed. Compared with the local business segment, more market research through 'walking the chain' activities would be beneficial for growers serving this market segment.

The overseas customer segment according to Ruud and Nico, (2014) is overseas business customers who are most likely wholesale distributors. The eventual customers would be overseas florists and consumers. Through an exporter, this customer segment will have specific requirements and demand high responsiveness at a reasonable price. The concept of time and daily prioritization by growers at the village level can be very different from those in the business world. Nonetheless, such lost opportunities may form part of a learning curve for players aspiring to serve the overseas customer segment in the future. Supply-chain strategies for this overseas market segment demand a high level of operational efficiency coupled with a very high level of responsiveness to realise customer specification. A responsiveness requirement may be to meet precise product specifications through intimate working knowledge of the end-customers' requirements and practices.

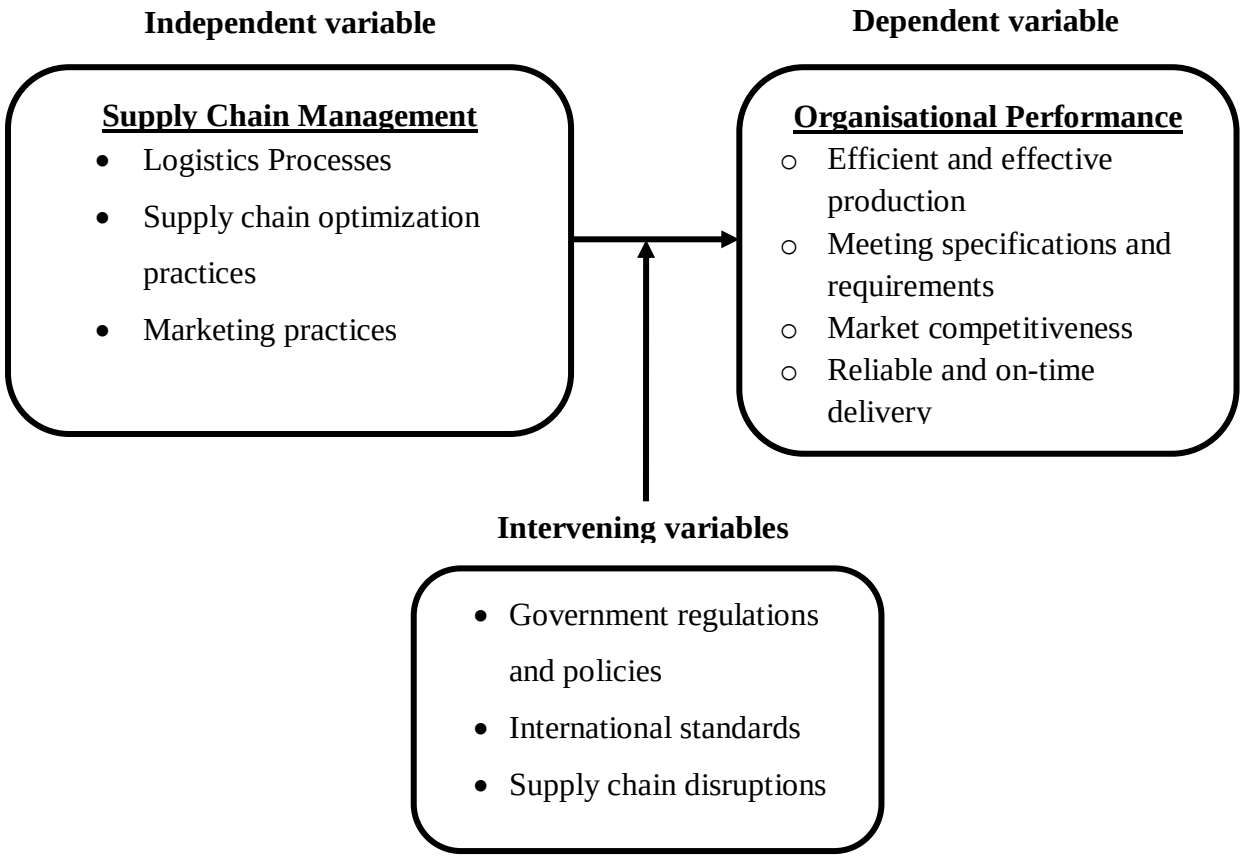
Ruud and Nico, (2014) add that, other factors affecting adoption of strategies in floral supply chains include; the level of competition, size of the customer segment and strengths and

weaknesses of the associated supply chain. As most players are involved in more than one supply chain, there are various areas of endeavor that can yield synergies. These include procurement of planting materials for different customer segments and supply chains, management learning across chains, technical knowledge and skills sharing across groups, and transport arrangements for order fulfillment for more than one segment and supply chain. How these marketing strategies and practices have been embraced by Wagagai Limited was critical to the study.

## 2.4. The conceptual framework

Conceptual framework is a model of how one makes logical or relationships among the several factors that have been identified as important to the problem (Sekaran, 2003). The conceptual framework for this study is developed to examine the relationship between supply chain management and performance of floricultural firms as shown in the figure 2.4.a.

**Figure 2.4.a: Conceptual framework**




***Source**: Mckinnon et al, (2010); Lysons and Farrington, (2006); and ISM, (2006)*

It depicts the relationship between the independent variable, supply chain management which consists of logistics processes; supply chain optimization practices; and marketing practices and the dependent variable, performance. Performance is conceptualized in terms of: Efficient and

effective production; Meeting specifications and requirements; Market competitiveness; and Reliable and on-time delivery. However, the outcome might also be influenced by the intervening variables such as government regulations and policies; PPDA regulations and guidelines; and macro ethical issues.

# CHAPTER THREE

# METHODOLOGY

## 3.1 Introduction

This chapter presents the research methodology. It highlights the overall research design to be adopted by the study, area of study, target population, sample size, sampling procedures, data collection methods, data collection instruments, data collection, processing, analysis and limitations of the study.

## 3.2 Research design

A research design is used to structure and show all the major parts of the research project work together to try to address the central research questions (Trochim, 2006). It includes the research approach, strategy, and methods.

### 3.2.1 Research approach

According to Trochim (2006), a research approach is the basic approach to research. The study adopted a phenomenological approach that gives the experience of social phenomena by those involved in the investigation. It gives a greater understanding of what is happening and therefore yield valuable data. This made it appropriate for a relational investigation on supply chain management and performance of Wagagai Limited.

### 3.2.2 Research strategy

The study adopted a cross sectional survey and case study strategy. A cross-sectional survey strategy is adopted because a cross-section of the population make the research feasible involving only one study population which was contacted once for the required data. A case

study research strategy was chosen because it uses specific subjects with common characteristics enough to represent the rest other than studying the entire population and the study was able to dwell on the information from Wagagai Limited for deductions and generalization on supply chain management and performance of floricultural firms in Uganda.

### 3.2.3 Research classification

The study adopted both a quantitative and qualitative methods to data collection and analysis. According to Sarantakos (2005) a quantitative methodology involved the use of structured techniques of data collection that allow quantification measurement and operation using quantitative methods of analysis. On the other hand, qualitative methodology was based on the theoretical and methodical principles of symbolic interactions. Quantitative methods were used in the study because data being sought had to be quantified to establish the relationship between supply chain management and performance of Wagagai Limited by way of correlation. The qualitative method was used because obtaining nominal data is critical to giving a detailed and descriptive analysis of supply chain management practices and performance of Wagagai Limited. Hence, the study used both descriptive and inferential statistics in the analysis, interpretation and drawing conclusions from findings. This involved using frequencies, hypothesis testing, analysis of variance (ANOVA), pearson's linear correlation coefficients in bivariate and multivariate regression analysis of findings on supply chain management and performance of Wagagai Limited.

## 3.3 Study population

The study population was 110 including the 1 Director, 5 Managers, 13 Supervisors, 20 key and accessible Production Staff, 9 Health and Safety, 11 Standards and Compliance staff, 24

Transport and Storage, 4 Finance staff, and 7 Equipment Management and Maintenance, 9 Marketing and Sales Staff, and 7 Customs Health Inspectors. These were targeted because they were involved in the supply chain management practices of Wagagai Limited and how they had affected its performance.

### 3.4 Sample Size

A sample is a collection of some of subset elements of the population. Dealing with the whole population would be costly, time consuming, faces limited cooperation, less accurate, among other limitations and therefore, dealing with a smaller group of population elements yields better research convenience and reliability upon generalizations that apply to the whole population would apply (Oppenheim, 1996). A sample of **86** was used for the study determined using Slovin's formula (shown below).

$$n = \frac{N}{1 + N\,(e)^2}$$

Where, **n** is the sample size, **N** is the population size, and **e** is the margin of error at 95% confidence level.

*Computed:*

$$n = \frac{110}{1 + 110\,(0.05)^2} \qquad n = \frac{110}{1 + 110 * 0.0025}$$

$$n = \frac{110}{1.275} \qquad n = 86$$

### 3.5 Sampling methods and techniques

Determining the sample elements for the study to constitute the sample size of 86, both the *probability* and *non-probability* sampling methods were used in this study.

#### 3.5.1 Non probability sampling methods and techniques

There was need for non-probability sampling method in which the elements of the population have no known probability of being selected (Bryman, 2001). Though biased, it offered a faster, cheap and less complicated approach to sampling besides not offering any chance to leaving out key informants in the study population. Under the non probability sampling method, *purposive* and *census* techniques were used for key informants especially the director, managers and supervisors who oversee supply chain activities of Wagagai Limited. These techniques were used because according to Mcerudlen, (2004) purposive sampling is judgmental such that it enabled the researcher to select only those members of the population with sufficient technical knowledge of the subject matter so as to access technically required information whereas census sampling enabled an exhaustive coverage of the technical respondents in the study.

#### 3.5.2 Probability sampling methods and techniques

The *probability sampling* method in which all the elements of the population have known probability of being selected (Bryman, 2001) also applied to this study. In this, a *simple random sampling* technique was used in the selection of the respondents from each category where non probability sampling had not been applied. All names in a particular category were put in a box and randomly selected. This technique was selected because it was advantageous in creating equal chances for all respondents to be selected and avoid bias.

The application of these sampling methods and techniques yielded a sampling frame as shown in the table 3.1.

**Table 3.1: Sampling frame**

| Category | Population Number (N) | Sample Number (S) | Sampling Technique |
|---|---|---|---|
| Director | 1 | 1 | Census |
| Managers | 5 | 3 | Simple random |
| Supervisors | 13 | 9 | Purposive and Simple random |
| Production Staff | 20 | 18 | Simple random |
| Health and Safety | 09 | 06 | Purposive and Simple random |
| Standards and Compliance Staff | 11 | 8 | Simple random |
| Transport and Storage | 24 | 20 | Simple random |
| Finance Staff | 4 | 3 | Simple random |
| Equipment Mgt & Maintenance | 7 | 5 | Simple random |
| Marketing & Sales Staff | 9 | 9 | Census |
| Customs Health Inspectors | 7 | 4 | Simple random |
| **TOTAL** | **110** | **86** | |

***Source:*** *Sampling activities of the research, 2018*

### 3.6 Response rate

Out of the 86 respondents sampled and reached, 69 were able to respond to questions raised to them through questionnaires and interviews. 17 respondents out of the target sample did not return questionnaires and get involved in interviews indicating 80.2% response rate and 19.8% non response rate as shown in table 3.2.

**Table 3.2: Response rate**

| **Response rate** | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Response | 69 | 80.2 | 80.2 |
| | Non response | 17 | 19.8 | **100.0** |
| | **Total** | **86** | **100.0** | |

*Source: Primary data, 2018*

Statistics in table 3.2 imply that the information obtained gives a significant representation of the population studied and therefore reliance could be placed on the statistics to draw a conclusion on the relationship between supply chain management practices and performance of Wagagai Limited as investigated.

### 3.7: Background Information of Respondents

Establishing the background information of respondents such as their age, sex, level of education, occupation, marital status, and the period of work in their occupation or relationship with Wagagai Limited was critical to this study. These were viewed to impact in one way or the other on their conceptualization and knowledge of supply chain management practices and performance of Wagagai Limited. The study came up with the following findings:

#### 3.7.1 Age of respondents

Table 3.3 indicates the age of respondents is given. 7.1% were below 26 years of age, 33.3% were 26-35 years, 36.2% were 36-45, 17.4% were 46-55 and 5.8% were above 55 years. Results reveal that majority of the respondents that is 92.8% were above 26 years of age implying decisions and choices made are those likely to be based on maturity, experience and technical knowledge of supply chain management practices and performance of Wagagai Limited.

**Table 3.3: Age of respondents**

| **Age of respondents(years)** | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Below 26 | 05 | 7.2 | 7.2 |
| | 26 - 35 | 23 | 33.3 | 40.5 |
| | 36 – 45 | 25 | 36.2 | 76.7 |
| | 46 - 55 | 12 | 17.4 | 94.1 |
| | Above 55 | 04 | 5.8 | **100.0** |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

### 3.7.2 Sex of respondents

The study sought to establish the sex of the respondents and findings were as indicated in table 3.4.

**Table 3.4: Sex of respondents**

| **Sex of respondents** | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Male | 43 | 62.3 | 62.3 |
| | Female | 26 | 37.7 | **100.0** |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

43 of them were male and 26 were female indicating a sex representation of 62.3% and 37.7% respectively as shown in table 3.4. This implied that gender bias in opinion was checked to facilitate a balanced view of the relationship between the variables studied.

### 3.7.3 Level of education

The study also sought to establish the respondents' level of education and results are as indicated in table 3.5. Majority respondents 53.6% were holders of a diploma holders, 24.6% fell in the

category of others, 15.9% bachelors' degree holders, 2.9% certificate holders, and 2.9% masters' holders.

**Table 3.5: Respondents' level of education**

| **Level of Education** | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Others | 17 | 24.6 | 24.6 |
| | Certificate | 2 | 2.9 | 27.5 |
| | Diploma | 37 | 53.6 | 81.1 |
| | Bachelors | 11 | 15.9 | 97.1 |
| | Masters | 2 | 2.9 | **100.0** |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Results in table 3.5 imply the great degree of reliance the study could place on the information obtained as the number of educated respondents surpassed the basic level of education chance of error in responses given by them on supply chain management practices and performance of Wagagai Limited.

### 3.7.4 Occupation of respondents

Establishing the respondents' occupation was essential to assessing the technical knowledge of supply chain management practices and performance of Wagagai Limited. Results on this were as indicated in table 3.6.

Table 3.6 shows the distribution of respondents by occupation and relationship with Wagagai Limited. 1.4% Director, 4.3% Managers, 11.6% Supervisors, 26.1% key and accessible Production Staff, 8.7% Health and Safety, 7.2% Standards and Compliance staff, 15.9% Transport and Storage, 4.3% Finance staff, and 5.8% Equipment Management and Maintenance, 10.1% Marketing and Sales Staff, and 4.3% Customs Health Inspectors.

**Table 3.6: Occupation of respondents**

| **Occupation of respondents** | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Directors | 1 | 1.4 | 1.4 |
| | Managers | 3 | 4.3 | 5.7 |
| | Supervisors | 8 | 11.6 | 17.3 |
| | Production Staff | 18 | 26.1 | 43.4 |
| | Health and Safety | 6 | 8.7 | 52.1 |
| | Standards and Compliance staff | 5 | 7.2 | 59.3 |
| | Transport and Storage | 11 | 15.9 | 75.3 |
| | Finance staff | 3 | 4.3 | 79.4 |
| | Equipment Mgt and Maintenance | 4 | 5.8 | 85.5 |
| | Marketing and Sales Staff | 7 | 10.1 | 95.6 |
| | Customs Health Inspectors | 3 | 4.3 | **100.0** |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

These statistics therefore imply that the respondents were knowledgeable about supply chain management practices and performance of Wagagai Limited which gives data provided by them a qualified and reliable base for the study in Wagagai Limited.

### 3.7.5 Marital status

The study also sought to establish the marital status of respondents. Results as presented in table 3.7 indicate that 18.8% respondents were single, 65.2% were married, 7.2% were separated, 7.2% divorced, and 1.4% were widowed. This implies a stable and committed workforce in Wagagai Limited that was stably involved in its operations and therefore, data gathered from

them gave an adequately reliable view of the situation on supply chain management practices and performance of Wagagai Limited.

**Table 3.7: Marital status of respondents**

| **Marital status** | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Single | 13 | 18.8 | 18.8 |
| | Married | 45 | 65.2 | 84.0 |
| | Separated | 5 | 7.2 | 91.3 |
| | Divorced | 5 | 7.2 | 98.5 |
| | Widowed | 1 | 1.4 | **100.0** |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

### 3.7.6 Period of work in Wagagai Limited

The majority of the respondents that is 42.0% had worked in Civil Aviation Authority for 6-10 years, 29.0% for 11-15 years, 23.2% for 16-20 years, 2.9% for over 20 years and 2.9% had served for less than 6 years as indicated in table 3.8.

**Table 3.8: Respondents' period of work with Wagagai Limited**

| **Period of work (years)** | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Below 6 | 2 | 2.9 | 2.9 |
| | 6 - 10 | 29 | 42.0 | 44.9 |
| | 11-15 | 20 | 29.0 | 73.9 |
| | 16 - 20 | 16 | 23.2 | 97.1 |
| | Above 20 | 2 | 2.9 | **100.0** |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

This implies that majority of the respondents are well versed with the activities of Wagagai Limited and therefore, have adequate knowledge of supply chain management practices and performance of Wagagai Limited. And given the scope of the study to be 5 years, reliance can be placed upon the information provided by them to answer the questions of the study.

### 3.8 Data Collection Methods

Two kinds of data were collected for this study that is, primary data and secondary data. Primary data were collected through survey, and interviews. Review of documents on performance, operational policies, and reports was done to collect secondary data. Multiple methods of data collection were used because no single method of data collection could guarantee full accuracy levels.

#### 3.8.1 Interviews

Conducting interviews with key respondents is essential to gathering critical primary data in this study. An interview is an oral questioning method of data collection where the investigator directly engages in a verbal interaction with participants (Amin, 2005). Interviews were conducted to obtain data on supply chain management in particular logistics processes, supply chain optimization practices, and marketing practices and how they affected performance targets of Wagagai Limited. Interviewing key respondents like the director, managers and supervisors gave vital and in-depth data on supply chain management and performance of Wagagai Limited.

#### 3.8.2 Survey method

Survey is a self reporting method of data collection involving the use of a questionnaire to gather data about the variables of interest in an investigation (Oppehein, 1996). It gathers data in accordance with the specifications of the research objectives, questions and hypotheses. It was

necessary for this study to give an in-depth and wider coverage of both the unit of investigation and the study variables, and also provided savings in time. Questions were coded following a likert scale of 1 to 5 as the translated progression from levels of disagreement to high levels of agreement.

### 3.8.3 Documentary review

Documentary review is method that involves the research reading about other people's work or already existing data in print or published form (Kothari, 2004). It is necessary to collect secondary data required by the study. The researcher reviewed documents including those relating to supply chain management and performance of Wagagai Limited. These documents included but not limited to: record of supply chain management activities, performance reports, compliance audit reports, health inspection reports, and others. The data obtained played a backup and supportive role to the raw data that was obtained using primary data sources and methods.

## 3.9 Data Collection Instruments

Data collection starts with determining what kind of data is required and thus, determines instruments the researcher needs to collect the data from the selected sample. The study needed both primary and secondary data and hence adopted several data collection instruments to include; self administered questionnaires, interview guides, and documentary review checklists.

### 3.9.1 The Self-Administered Questionnaires (SAQs)

The study used self administered questionnaires to collect primary data. These questionnaires were delivered physically by the researcher to respondents in the sample who filled them and later collected by the researcher from the point designated for their return. These tools contained questions on supply chain management and performance of Wagagai Limited. The questions

required the respondents to tick their favored options supplied on a five point Likert scale to which levels of agreement; Strongly Disagree, Disagree, Not Sure, Agree and Strongly Agree were weighed as *1, 2, 3, 4* and *5* in score. This instrument was chosen because it is easy to administer and responses can easily be analyzed.

### 3.9.2 Interview Guide

Interview guides were used to gather consistent general information about supply chain management and performance of Wagagai Limited. In addition to answering questionnaires, the interviews targeted key respondents involved in Wagagai's operations like the Director, Managers, Supervisors, and Customs Health Inspectors. This method was appropriate because it ensured proper understanding and capturing detailed facts about the various activities associated with supply chain management and performance of Wagagai Limited. There was a planned face-to-face interaction before the actual interview of respondents. Appointments with respondents were made, and time of the interview also agreed upon in advance. At analysis, the data obtained from the interviews was triangulated with the data from other methods before conclusions were made.

### 3.9.3 Documentary review checklists

Observation and documentary review checklists are informational job aids that spell out what items and documents to be observed and reviewed respectively (Sarantakos, 2005). They were necessary because they ensured consistence and completeness of what was being observed and reviewed to gather data intended to be collected by them.

## 3.10 Administration of the instruments

A pre-test was carried out on the intended respondents before administering the questionnaires. Pre-testing allows adjustments to the questionnaire by incorporating comments from the pre-test

respondents in addition to assessing the language simplicity, ability to get information needed, acceptability and privacy of the respondents. This gives clues to the unforeseen in the study since a thorough check of planned procedures is appraised (Mitchell, 1996). Hence, content validity tests, reliability tests and guarantee of respondents' privacy by data collection instruments were put into consideration. In addition, all the respondents that were issued with questionnaires and all participating in the study were expected to be informed and knowledgeable about supply chain management and performance of Wagagai Limited.

### 3.10.1 Content Validity tests

Validity refers to the extent to which the quality of a research procedure or instrument is accurate, correct, meaningful and right. Content Validity focuses on the extent to which the content of an instrument corresponds to the content of the theoretical concept it is designed to measure (Bell, 1999). Content validity testing of the self administered questionnaire and interview guide as the main data collection instruments for this study was carried out following computation of the Content Validity Index (CVI) with acceptance at CVI $\geq 0.7$ and where it falls below, then revisions would be made following the advice of the experts and rerun of test done to reach an acceptable index. The content validity formula below was used:

$$\text{CVI} = \frac{\text{Number of valid judgments (items)}}{\text{Total number of test Judgments (items)}}$$

The study subjected the tools to a content validity test by distributing samples to 10 people with expert knowledge in supply chain management and operations of floricultural firms. Those that judged the content of Self Administered Questionnaires and interview guides as valid were 9 and 8 out of 10 judges. This gave Content Validity Indices (VDIs) of 0.9 and 0.8 respectively which all implied acceptance of the instruments since they surpassed the minimum bar of acceptance of

the CVI ≥ 0.7. Therefore, the content of the instruments used in the study adequately measured the relationships between supply chain management and performance of Wagagai Limited.

### 3.10.2 Reliability tests

Reliability is the measure of the internal consistency of the research instruments (Amin, 2005). The reliability of questionnaires as the major data collection instrument is concerned with the consistency of responses to the questions. To measure the consistency of responses across all the scaled questions or group of the questions from the questionnaire was done by establishing the Cronbach's alpha (**α**) coefficient using SPSS. For the questionnaire and any instrument to be considered reliable, it would have to yield a Cronbach's alpha (**α**) coefficient **α** ≥ 0.7 (Nunnaly, 1978). Any value less, would require a revision of the questions and scaling until the acceptable alpha coefficient is realized.

On performing the test, a Cronbach's Alpha coefficient of **α** = 0.821 was obtained as indicated in matrix 3.1.

**Matrix 3.1: Cronbach's alpha reliability test results**

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | N of items |
|---|---|---|
| .821 | .814 | 40 |

*Source: SPSS study reliability tests, 2018*

From matrix 3.1, the alpha index **α** = 0.821 indicates reliability to be placed on research instruments since the alpha coefficient obtained is greater than 0.7. This therefore yielded data that reliably tested the study variables and the relationships existent between them.

### 3.10.3 Ethics and data collection procedures

Confidentiality and privacy of respondents was respected in this study. This was done by inserting confidentiality clauses into research instruments and adhering to corporate ethics and research procedures of Nkumba University including the acquisition of an introductory letter from the School of Business Administration, Nkumba University and permission from the Manager Human Resources–Wagagai Limited to conduct a research in the organization. At the same time the researcher before engaging particular respondents, the researcher sought the consent of respondents.

### 3.10.4 Measurement of variables

The variables of the study in the questionnaire were measured on a five likert scale ranging from 1, 2, 3, 4, and 5 as ranking/weights to Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree respectively. The choice of this measurement was that each point on the scale carries numerical score which was used to measure the opinion of respondents and it is the most frequently used summated scale in the study of business and social attitude.

## 3.11 Data processing, analysis and presentation

Data collected was processed and analyzed using the SPSS data analysis program by running descriptive analyses to establish frequencies and percentages as well as hypothesis testing, analysis of variance, and correlation/regression analysis. This yielded frequency tables, ANOVA matrices, correlation matrices, and model summaries that were the mode of presenting and basis of interpreting findings. Qualitative data from the field was analyzed using critical judgment by considering those elements which tallied with the study elements in the conceptual framework. Presentation also considers triangulation of findings obtained using various methods and instruments of data collection that were used in the study.

### 3.12 Limitations of the study

Because the study intended to examine the relationship between supply chain management and performance of Wagagai Limited, the researcher encountered some form of falsification of information especially from staff of Wagagai Limited involved in key supply chain processes with the intention of concealing their ineffectiveness. However, the researcher tried to assure all respondents a high level of confidentiality. Low levels of cooperation from respondents in drawing up appointments especially for interviews that hampered the effectiveness of the study. However, the researcher endeavored to work within his means and exercise patience where appointments seemed so tight to fit into.

# CHAPTER FOUR

# LOGISTICS PROCESSES AND PERFORMANCE OF WAGAGAI LIMITED

## 4.1 Introduction

The study sought to examine the relationship between logistics processes and the performance of Wagagai Limited. This chapter provides presentations, analyses and interpretation of findings on the relationship between logistics processes and the performance of Wagagai Limited. It gives descriptive and inferential statistics presented in tables and matrices of results relating to the study. These results are as given in table 4.1 to 4.13.

## 4.2 Operating a temperature controlled transport and storage system

The study sought to establish whether Wagagai Limited operates a temperature controlled transport and storage system for floral products. The study yielded findings as indicated in table 4.1.

**Table 4.1: Operating a temperature controlled transport and storage system**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 3 | 4.3 | 4.3 |
| | Disagree | 2 | 2.9 | 7.2 |
| | Not Sure | 6 | 8.7 | 15.9 |
| | Agree | 22 | 31.9 | 47.8 |
| | Strongly Agree | 36 | 52.2 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 4.1 indicate that, 4.3% strongly disagreed, 2.9% disagreed, 8.7% were not sure, 31.9% agreed, and 52.2% strongly agreed. These show majority of the respondents that is 84.1% in agreement with Wagagai Limited operating a temperature controlled transport and storage

system. This was line with the view of the Cold Storage Manager, who during interviews noted that,

> *"…to ensure flowers cuttings and other products are kept in the right state of quality, we have a well-established cold storage system traced all the way from production to the final customer".*

This implies improved quality and customer satisfaction which contributes to expanded market potential of Wagagai Limited. However, the 15.9% minority respondents in disagreement indicate the need to have improvement cold storage facilities and processes for better levels of product integrity and customer satisfaction.

### 4.3 Visibility of logistics collaboration and integration

Visibility of collaboration and integration of logistics in floral supply chains is critical tracing performance across the chain. Therefore, this was sought to be established by the study in Wagagai Limited and findings were as indicated in table 4.2.

**Table 4.2: Visibility of logistics collaboration and integration**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 3 | 4.3 | 4.3 |
| | Disagree | 2 | 2.9 | 7.2 |
| | Not Sure | 11 | 15.9 | 23.1 |
| | Agree | 27 | 39.1 | 62.2 |
| | Strongly Agree | 26 | 37.7 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

From table 4.2, 4.3% of respondents strongly disagreed, 2.9% disagreed, 15.9% were not sure, 39.1% agreed, and 37.7% strongly agreed to visibility of collaboration and integration of

logistics in Wagagai Limited. The 76.8% majority in agreement were in harmony with the interview results where the Manager Transport and Storage noted that,

> *"…. Keeping track of all processes and movement is paramount in ensuring quality throughout the chain. So integration and cooperation are necessary across all processes."*

This implies that logistics processes of Wagagi Limited have been integrated and collaborated to have a collective concern for performance improvement. However, with 23.2% respondents in disagreement, there is need for improved integration and collaboration for more optimal performance results.

### 4.4 Packaging and labeling is meeting customer requirements

Packaging and labeling is ideal to meet customer requirements and ensure integrity. Therefore, an investigation on this led to results as indicated in table 4.3.

**Table 4.3: Packaging and labeling is meeting customer requirements**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 2 | 2.9 | 2.9 |
| | Disagree | 2 | 2.9 | 5.8 |
| | Not Sure | 14 | 20.3 | 26.1 |
| | Agree | 25 | 36.2 | 62.3 |
| | Strongly Agree | 26 | 37.7 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

From table 4.3 it is indicate that, 2.9% strongly disagreed, 2.9% disagreed, 20.3% not sure, 36.2% agreed, and 37.7% strongly agreed with packaging and labeling of floral products in Wagagai Limited being ideal to meet customer requirements and ensure integrity. The 73.9%

majority respondents agreed implying that, Wagagai Limited has been able to leverage the floral export market through good packaging and labeling practices that have been customized to meet customer requirements and sustained product integrity especially in the export markets. However, the 26.1% in disagreement is indicative of the need to make improvements in packaging and labeling in order have optimal satisfaction and improved integrity of its logistics processes which will subsequently bring about improved performance of Wagagai Limited.

### 4.5 Routine equipment and vehicle maintenance

The study investigated whether equipment and vehicle maintenance is routinely undertaken in Wagagai Limited to avoid mechanical breakdowns in the supply chain. Findings to this were as indicated in table 4.4.

**Table 4.4: Routine equipment and vehicle maintenance**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 3 | 4.3 | 4.3 |
| | Disagree | 2 | 2.9 | 7.2 |
| | Not Sure | 10 | 14.5 | 21.7 |
| | Agree | 28 | 40.6 | 62.3 |
| | Strongly Agree | 26 | 37.7 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 4.4 indicate 4.3% strongly disagreed, 2.9% disagreed, 14.5% were not sure, 40.6% agreed, and 37.7% strongly agreed. The majority respondents, that is 78.3% agreed to equipment and vehicle maintenance being routinely undertaken in Wagagai Limited to avoid mechanical breakdowns in the supply chain. However, 21.7% of total respondents disagreed to equipment and vehicle maintenance being routinely undertaken in Wagagai Limited to avoid

mechanical breakdowns in the supply chain. This creates inefficiencies in the performance of its logistics processes that have hindered optimal performance improvement in Wagagai Limited.

### 4.6 Information processes to facilitate real-time flow and response to needs

The study investigated whether Wagagai Limited has efficient information processes to facilitate real-time flow and response to stakeholder needs and findings were as indicated in table 4.5.

**Table 4.5: Information processes to facilitate real-time flow and response**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 3 | 4.3 | 4.3 |
| | Disagree | 2 | 2.9 | 7.2 |
| | Not Sure | 7 | 10.1 | 17.3 |
| | Agree | 32 | 46.4 | 63.7 |
| | Strongly Agree | 25 | 36.2 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 4.5 show that, 4.3% respondents strongly disagreed, 2.9% disagreed, 10.1% were not sure, 46.4% agreed, and 36.2% strongly agreed. The majority respondents that is, 82.6% were in agreement with Wagagai Limited having efficient information processes to facilitate real-time flow and response to stakeholder needs. However, the 17.4% minority in disagreement imply inefficiencies in its information processes that have hampered the achievement of real-time flow and response to stakeholder needs. This was evidently supported by the interview with the Marketing and Sales Supervisor noting that,

*"....much as we have embraced use of ICT in our information exchange processes, the entire customer base in the local market has not got on board. We rely a lot on retail outlets and import agents in overseas markets as information centers"*

This is indicative of the need to build organisation-customer information flow processes in Wagagai's logistics processes built in Business-to-customer model to facilitate improved real-time flow and response to customer needs.

### 4.7 Order processing ensuring greater responsiveness to customer requirements

Whether order processing is fast to ensure greater responsiveness to customer requirements in Wagagai Limited was sought to be established by the study yielding results as indicated in table 4.6.

**Table 4.6: Order processing ensuring greater responsiveness to customer requirements**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 2 | 2.9 | 2.9 |
| | Disagree | 2 | 2.9 | 5.8 |
| | Not Sure | 9 | 13.0 | 18.8 |
| | Agree | 28 | 40.6 | 59.4 |
| | Strongly Agree | 28 | 40.6 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 4.8 indicate that, 2.9% strongly disagreed, 2.9% disagreed, 13.0% were not sure, 40.6% agreed, and 40.6% strongly agreed. The majority respondents 81.2% agreed to order processing in Wagagai Limited as being fast to ensure greater responsiveness to customer requirements and the minority 18.8% disagreed. This was confirmed in interview with the one Sales and Marketing staff, who noted that,

*"…..it is our target to have fast response to orders of customers. We ensure that processing of orders are processed and customized according to customers' needs"*

These findings imply that order processing is important in achieving improved responsiveness to customer requirements. This is critical to optimizing performance expectations of floricultural firms like Wagagai Limited.

### 4.8 Wagagai Limited has established quality control systems

An investigation on whether Wagagai Limited has established quality control systems to ensure quality floral products are delivered to customers yielded findings as indicated in table 4.7.

**Table 4.7: Wagagai Limited has established quality control systems**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 2 | 2.9 | 2.9 |
| | Disagree | 2 | 2.9 | 5.8 |
| | Not Sure | 16 | 23.2 | 29.0 |
| | Agree | 26 | 37.7 | 66.7 |
| | Strongly Agree | 23 | 33.3 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

From table 4.7, it is observed that, 2.9% strongly disagreed, 2.9% disagreed, 23.2% were not sure, 37.7% agreed, and 33.3% strongly agreed. The 71.0% majority respondents agreed to Wagagai Limited having established quality control systems to ensure quality floral products are delivered to customers. However, 21.0% of the respondents disagreed, implying inefficiency of quality management systems in the logistics processes of Wagagai Limited. A review of the

2016/17 Performance Report revealed a concern for declining overseas sales resulting from failure to have optimal satisfaction of quality standards of floral products in European markets.

### 4.9 A customer service policy to guide staff

Examining whether Wagagai Limited has a customer service policy to guide staff involved in its supply chain operations was critical to this study. Findings to the investigation of this item were as indicated in table 4.8.

**Table 4.8: A customer service policy to guide staff**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 1 | 1.4 | 1.4 |
| | Disagree | 3 | 4.3 | 5.7 |
| | Not Sure | 6 | 8.7 | 14.4 |
| | Agree | 39 | 56.5 | 70.9 |
| | Strongly Agree | 20 | 29.0 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

From table 4.8, 1.4% were found to strongly disagree, 4.3% disagreed, 8.7% were not sure, 56.5% agreed, and 29.0% strongly agreed. The majority respondents that is, 85.5% agreed to Wagagai Limited having a customer service policy to guide staff involved in its supply chain operations. However, the 14.4% minority respondents were in disagreement implying possible inefficiency and ineffectiveness of its customer service policy that raises performance gaps.

### 4.10 Inventory control practices and customer expectations

The study sought to examine whether inventory control practices of Wagagai Limited are appropriate for meeting expectations of customers. Findings to the investigation of this item were as indicated in table 4.9.

**Table 4.9: Inventory control practices and customer expectations**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 2 | 2.9 | 2.9 |
| | Disagree | 3 | 4.3 | 7.2 |
| | Not Sure | 3 | 4.3 | 11.5 |
| | Agree | 25 | 36.2 | 47.7 |
| | Strongly Agree | 36 | 52.2 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

From table 4.9, it is observed that 2.9% strongly disagreed that inventory control practices of Wagagai Limited are appropriate for meeting expectations of customers, 4.3% disagreed, 4.3% were not sure, 36.2% agreed, and 52.2% strongly agreed. With the majority in agreement, it implies the significance of inventory control to satisfaction of customers in floral supply chains. However, the 11.5% respondents in disagreement and document review results were in contrast the above. In its 2015/16 Export Assessment Report, Wagagai Limited noted low export volumes and failure to satisfy large customer inquiries and requisitions in Europe.

### 4.11 Effectiveness of logistics processes in Wagagai Limited

Floricultural firms need to operate effective logistics processes so as to improve the performance of their supply chain. This was critical to the study in Wagagai Limited and yielded findings as indicated in table 4.10.

**Table 4.10: Effectiveness of logistics processes in Wagagai Limited**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 4 | 5.8 | 5.8 |
| | Disagree | 6 | 8.7 | 14.5 |
| | Not Sure | 14 | 20.3 | 34.8 |
| | Agree | 30 | 43.5 | 78.3 |
| | Strongly Agree | 15 | 21.7 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 4.10 show that, 5.8% strongly disagreed to Wagagai Limited operating effective logistics processes so as to improve the performance of its supply chain, 8.7% disagreed, 20.3% were not sure, 43.5% agreed, and 21.7% strongly agreed. Though the majority agreed, there were a significant number of respondents that is 34.8% in disagreement. This implies the needs to an integrated improvement of logistics processes so bring about improved performance of Wgagai Limited especially in the foreign markets.

### 4.12 Correlation of Logistics Processes and Performance of Wagagai Limited

To determine the relationship between logistics processes and performance of Wagagai Limited, a correlation analysis was done and produced results as indicated in table 4.11.

**Table 4.11: Correlation of Logistics Processes and Performance of Wagagai Limited**

**Correlations**

| | | Logistics Processes | Performance of Wagagai Limited |
|---|---|---|---|
| **Logistics Processes** | Pearson Correlation | 1 | .708** |
| | Sig. (2-tailed) | | .001 |
| | N | 69 | 69 |
| **Performance of Wagagai Limited** | Pearson Correlation | .708** | 1 |
| | Sig. (2-tailed) | .001 | |
| | N | 69 | 69 |

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

From table 4.11, correlation results indicated a strong positive relationship between logistics processes and performance of Wagagai Limited given **r** = 0.708 at significance levels **p** = 0.001 less than 0.05. This implies that an improvement logistics processes will bring about a significant improvement in the performance of Wagagai Limited and the floral supply chain as a whole.

### 4.13 Regression analysis

Regression analysis was performed to support the results of correlation analysis in establishing the relationship between logistics processes and performance of Wagagai Limited. Results were as indicated in table 4.12.

**Table 4.12: Model Summary of logistics processes and performance of Wagagai Limited**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .708[a] | .501 | .487 | .13146 |

**a.** Predictors: (Constant), Logistics Processes

With ***r*** = 0.708 in the table 4.12 of the Model Summary, it can be concluded that Logistics Processes have a strong positive relationship with the performance of performance of Wagagai

Limited. This means a positive improvement logistics processes will lead to a positive improvement in performance of Wagagai Limited by 70.8%. And the coefficient of determination i.e. the Adjusted ***R*** Square value suggests that this improvement in the performance of Wagagai Limited can be 48.7% predicted by a positive change in the logistics processes. The other 51.3% change in the performance of Wagagai Limited is explained by other factors that are not part of this model.

### 4.14 Standardized coefficients

Establishing standardized coefficients of the relationship between logistics processes and performance of Wagagai Limited was done and yielded results as indicated table 4.13.

**Table 4.13: Coefficients of logistics processes and performance of Wagagai Limited**

**Coefficients [a]**

| Model | Un standardized Coefficients | | Standardized coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| 1 (Constant) | 33.132 | 28.453 | | 1.357 | .002 |
| **Logistics Processes** | .022 | .018 | .708 | 24.825 | .001[a] |

a. Performance of Wagagai Limited

The analysis of the coefficients in table 4.13 of logistics processes and performance of Wagagai Limited shows the values of $\boldsymbol{\beta} = 0.708$, $\boldsymbol{t} = 24.825$ and $\boldsymbol{p} = 0.001 < 0.05$. The null hypothesis $H_{O1}$ was rejected and the alternative $H_{A1}$ was supported. This implies that logistics processes and performance of Wagagai Limited are statistically related and positively influence each other. Therefore, a positive change in logistics processes will bring about a significant positive change or improvement in the performance of Wagagai Limited.

# CHAPTER FIVE

# SUPPLY CHAIN OPTIMIZATION PRACTICES AND THE PERFORMANCE OF WAGAGAI LIMITED

## 5.1 Introduction

This chapter provides presentations, analyses and interpretation of findings on how supply chain optimization practices have enhanced the performance of Wagagai Limited. It gives descriptive statistics as well as inferential statistics relating to the study presented in tables. Results of correlation analysis, regression analysis and establishing standardized coefficients of the relationship between supply chain optimization practices and the performance of Wagagai Limited are also provided.

## 5.2 Holding inventories to buffer distribution operations

The study sought to establish whether Wagagai Limited holds inventories at various locations to buffer distribution operations and yielded findings as indicated in table 5.1.

**Table 5.1: Holding inventories to buffer distribution operations**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 6 | 8.7 | 8.7 |
| | Disagree | 3 | 4.3 | 13.0 |
| | Not Sure | 8 | 11.6 | 24.6 |
| | Agree | 33 | 47.8 | 72.4 |
| | Strongly Agree | 19 | 27.5 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 5.1 show that, 8.7% to have strongly disagreed, 4.3% disagreed, 11.6% were not sure, 47.8% agreed, and 27.5% strongly agreed. The majority respondents that is, 75.3% agreed to Wagagai Limited holding inventories at various locations to buffer distribution operations. Similarly, in an interview with the Sales and Marketing Manager, he noted that,

> *"….true we have established a few cold storage points for holding inventory to buffer distribution. But such points are mainly established at our production center and booked space in customs cold storage facilities at Entebbe Airport…..locally; distribution is usually done straight away."*

This implies the significance of inventory holding as being real-time in order to facilitate distribution in mainly foreign consumer markets. However, with the 24.7% minority in disagreement it is implied the need to have cautious inventory holding to buffer distribution as this may compromise performance targets of Wagagai Limited.

### 5.3 Production planning to satisfy local and export demands

Examining whether Wagagai Limited undertakes production planning to satisfy local and export demands was critical to this study and yielded findings as shown in table 5.2.

**Table 5.2: Production planning to satisfy local and export demands**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 6 | 8.7 | 8.7 |
| | Disagree | 4 | 5.8 | 14.5 |
| | Not Sure | 7 | 10.1 | 24.6 |
| | Agree | 37 | 53.6 | 78.2 |
| | Strongly Agree | 15 | 21.7 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 5.2 show 8.7% in strong disagreement, 5.8% disagreed, 10.1% were not sure, 53.6% agreed, and 21.7% strongly agreed. The majority respondents that is, 75.3% agreed to Wagagai Limited undertaking production planning to satisfy local and export demands. This implies that, as a way of optimizing the supply chain, floricultural firms harmonize production with local and export demand. Otherwise, the rate of waste may be high and lead to the firm suffering heavy losses. However, the 24.7% respondents in disagreement, indicates the production planning gaps which failed the optimization of supply volumes especially in the EU markets as was revealed in the 2015/16 Export Assessment Report.

### 5.4 Consolidating orders to achieve economies of scale

Consolidating orders is one of the essential approaches to optimization of supply chains. Hence, the study sought to examine whether Wagagai Limited consolidates orders to achieve economies of scale and findings were as shown in table 5.3.

**Table 5.3: Consolidating orders to achieve economies of scale**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 1 | 1.4 | 1.4 |
| | Disagree | 2 | 2.9 | 4.3 |
| | Not Sure | 4 | 5.8 | 10.1 |
| | Agree | 32 | 46.4 | 56.5 |
| | Strongly Agree | 30 | 43.5 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 5.3 show 1.4% in strong disagreement, 2.9% to disagree, 5.8% were not sure, 46.4% agreed, and 43.5% strongly agreed. The majority respondents that is, 89.9% agreed to Wagagai Limited consolidating orders to achieve economies of scale in processing,

transportation and storage. This was further confirmed by the Transport and Storage Supervisor, who hinted that,

> *"...consolidating orders is one of the prime strategies we have taken on to significantly cut down cost in distribution operations"*

This implies that the order processing plays a significant role in optimizing floral supply chains especially in cutting down cost and subsequently improve the profitability of floricultural firms like Wagagai Limited.

### 5.5 Dynamic inventory policy to match market dynamics

The study sought to examine whether Wagagai Limited maintains a dynamic inventory policy to match the dynamics of the floral product market and findings were as shown in table 5.4.

**Table 5.4: Dynamic inventory policy to match market dynamics**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Disagree | 1 | 1.4 | 1.4 |
| | Not Sure | 6 | 8.7 | 10.1 |
| | Agree | 36 | 52.2 | 62.3 |
| | Strongly Agree | 26 | 37.7 | 56.5 |
| | **Total** | **69** | **100.0** | 100.0 |

*Source: Primary data, 2018*

Findings in table 5.4 show that, 1.4% disagreed, 8.7% were not sure, 52.2% agreed, and 37.7% strongly agreed to Wagagai Limited maintaining a dynamic inventory policy to match the dynamics of the floral product market. This was critical to ensuring on-time and reliable delivery of products to markets. With the majority respondents in agreement and minority in disagreement that is, 89.9% and 10.1% respectively it is implied that a dynamic inventory policy

is necessary to address the dynamics of floral supply chain markets and therefore, adoption of flexible policies is essential to optimization of floral supply chain operations and performance.

### 5.6 Certainty on demand and supply to optimize inventory holding

Certainty on demand and supply is critical to optimizing inventory holding in floral supply chains. Hence, an investigation on this happening in Wagagai Limited yielded findings as indicated in table 5.5.

**Table 5.5: Certainty on demand and supply to optimize inventory holding**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 7 | 10.1 | 10.1 |
| | Disagree | 4 | 5.8 | 15.9 |
| | Not Sure | 6 | 8.7 | 24.6 |
| | Agree | 38 | 55.1 | 79.7 |
| | Strongly Agree | 14 | 20.3 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

From table 5.5, 10.1% strongly agreed, 5.8% agreed, 8.7% were not sure, 55.1% agreed, and 20.3% strongly agreed that establishing certainty of demand and supply is critical to optimizing inventory holding in Wagagai Limited. With the majority respondents that is, 75.4% in agreement implied that, Wagagai Limited ascertains demand for various products in order to establish production levels and the inventory holding. This was consistent with the findings of interviews when the Production Manager hinted that,

"*Our products are highly perishable and preserving them is costly. So we try avoid any form of waste and cost by establishing the real demand to know how much to produce and how much inventory do we need to have flowing through our chain"*

This implied the critical importance of demand and supply certainty to inventory holding and performance of floricultural firms like Wagagai Limited. However, the 24.6% in disagreement indicated gaps in the role of demand and supply certainty in optimizing inventory holding in the supply chain that limits effectiveness and efficiency in its operations.

### 5.7 Quality control systems involving independent inspectors

The study sought to examine whether Wagagai Limited maintains quality control systems involving independent inspectors in order to optimize quality of floral products. Findings to this were as indicated in table 5.6.

**Table 5.6: Quality control systems involving independent inspectors**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 5 | 7.2 | 7.2 |
| | Disagree | 4 | 5.8 | 13.0 |
| | Not Sure | 6 | 8.7 | 21.7 |
| | Agree | 31 | 44.9 | 66.6 |
| | Strongly Agree | 23 | 33.3 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

It was revealed that, 7.2% strongly disagreed to this view, 5.8% disagreed, 8.7% were not sure, 44.9% agreed, and 33.3% strongly agreed to Wagagai Limited maintaining quality control systems involving independent inspectors in order to optimize quality of floral products. With

the majority respondents that is, 78.3% in agreement this implies the significance of independent quality inspectors to optimizing quality in floral supply chains. So, for floricultural firms like Wagagai Limited to achive optimal quality of products independent inspectors should be involved. This was accorded support by documentary reviews that found quality inspection reports by Customs Health Inspectors and Pre-export Verification of Conformity clearances issued in due of export of floral products by Wagagai Limited. However, the 21.7% in disagreement indicate intensity in quality controls for improved quality performance.

### 5.8 Disease control to ensure disease free propagation and production

The study sought to examine whether Wagagai Limited has established disease control to ensure disease free propagation and production. Findings to this were as indicated in table 5.7.

**Table 5.7: Disease control to ensure disease free propagation and production**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 1 | 1.4 | 1.4 |
| | Disagree | 5 | 7.2 | 8.6 |
| | Not Sure | 14 | 20.3 | 28.9 |
| | Agree | 26 | 37.7 | 66.6 |
| | Strongly Agree | 23 | 33.3 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 5.7 show that, 1.4% strongly disagreed, 7.2% disagreed, 20.3% were not sure, 37.7% agreed and 33.3% strongly agreed. With 71.0% respondents in agreement, it implies that Wagagai Limited has established disease control programmes to ensure disease free propagation and production. This is important to production of floral products that meet health and safety

standards. However, 29.0% in disagreement implies ineffectiveness of disease control programmes in Wagagai Limited that has hampered the optimization of health and safety in its supply chain as well as affecting its competitiveness especially in the foreign markets.

### 5.9 Adopting a flexible marketing system

The study sought to examine whether Wagagai Limited has adopted a flexible marketing system and findings to this were as shown in table 5.8.

**Table 5.8: Adopting a flexible marketing system**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 4 | 5.8 | 5.8 |
| | Disagree | 6 | 8.7 | 14.5 |
| | Not Sure | 7 | 10.1 | 24.6 |
| | Agree | 31 | 44.9 | 69.5 |
| | Strongly Agree | 21 | 30.4 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 5.8 show that, 5.8% respondents strongly disagreed, 8.7% disagreed, 10.1% were not sure, 44.9% agreed and 30.4% strongly agreed to Wagagai Limited adopting a flexible marketing system. With the 75.3% in agreement, it implies that achieving competitiveness in floral supply chains requires adopting a flexible marketing system. However, the 24.7% respondents in disagreement is so significant and therefore implies need for more commitment by Wagagai Limited towards establishing a flexible marketing system that will help realise greater competitiveness and reliability in markets.

### 5.10 Productivity from resources expended in the supply chain

Achieving productivity from resources expended in the supply chain is critical to optimizing floral supply chains. The study sought to examine whether Wagagai Limited has achieved productivity from resources expended in its supply chain and findings to this were as shown in table 5.9.

**Table 5.9: Productivity from resources expended in the supply chain**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 3 | 4.3 | 4.3 |
| | Disagree | 2 | 2.9 | 7.2 |
| | Not Sure | 7 | 10.1 | 17.3 |
| | Agree | 32 | 46.4 | 63.7 |
| | Strongly Agree | 25 | 36.2 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 5.9 show that, of the total respondents, 4.3% strongly disagreed, 2.9% disagreed, 10.1% were not sure, 46.4% agreed, and 36.2% strongly disagreed with Wagagai Limited achieving productivity from resources expended in its supply chain. The majority respondents that is, 82.6% were in agreement, while the 17.4% in disagreement were concretized in the interview with the Finance Manager, who noted that,

> *"Though progress is being made, the return on investment is still low. A lot is invested but output is low and due to stiff competition from other global suppliers of floral products, returns from sales are also still low."*

This implies that much as Wagagai Limited has had significant productivity of resources, there is need for improved productivity.

### 5.11 Operating an effective temperature controlled supply chain

The study sought to examine whether Wagagai Limited operates an effective temperature controlled supply chain and findings to this were as shown in table 5.10.

**Table 5.10: Operating an effective temperature controlled supply chain**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 3 | 4.3 | 4.3 |
| | Disagree | 2 | 2.9 | 7.2 |
| | Not Sure | 11 | 15.9 | 23.1 |
| | Agree | 27 | 39.1 | 62.2 |
| | Strongly Agree | 26 | 37.7 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 5.10 show 4.3% in strong disagreement, 2.9% disagreed, 15.9% not sure, 39.1% agreed, and 37.7% strongly disagreed. The 76.8% respondents that agreed to Wagagai Limited operating an effective temperature controlled supply chain imply that, temperature controlled environments are a critical aspect of optimizing floral supply chains and achieving improved performance of floricultural firms like Wagagai Limited. However, the 23.2% that disagreed imply the ineffectiveness of temperature controls that threatens product integrity and competitiveness of Wagagai Limited.

### 5.12 Correlation of Supply Chain Optimization and the Performance of Wagagai Limited

To determine the strength of the relationship between supply chain optimization and the Performance of Wagagai Limited, a correlation analysis was done and produced results as indicated in table 5.11.

**Table 5.11: Correlation of Supply Chain Optimization and the Performance of Wagagai Limited**

**Correlations**

| | | Supply Chain Optimization | Performance of Wagagai Limited |
|---|---|---|---|
| **Supply Chain Optimization** | Pearson Correlation | 1 | .641** |
| | Sig. (2-tailed) | | .000 |
| | N | 69 | 69 |
| **Performance of Wagagai Limited** | Pearson Correlation | .641** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 69 | 69 |

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

From table 5.11, correlation results indicated a moderately strong positive relationship between supply chain optimization and the performance of Wagagai Limited given **r** = 0.641 at significance levels **p** = 0.000 less than 0.05. This implies that an improvement in supply chain optimization practices will lead to a moderately significant improvement in the performance of Wagagai Limited.

### 5.13 Regression analysis

Regression analysis was performed to support the results of correlation analysis in establishing the relationship between supply chain optimization and Performance of Wagagai Limited. Results were as indicated in table 5.12

**Table 5.12: Model Summary of Supply Chain Optimization and Performance of Wagagai Limited**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .641[a] | .410 | .396 | .19421 |

**a.** Predictors: (Constant), Supply Chain Optimization

With ***r*** = 0.641 in the table 5.12, it can be concluded that supply chain optimization has a strong positive relationship with the performance of Wagagai Limited. And the coefficient of determination i.e. the Adjusted ***R*** Square value suggests that this improvement in the performance of Wagagai Limited can be 39.6% predicted by a positive change in optimization practices in its floral supply chain. The remaining 60.4% change in the performance of Wagagai Limited is explained by other factors that are not part of this model.

### 5.14 Standardized coefficients

Establishing standardized coefficients of the relationship between supply chain optimization and Performance of Wagagai Limited was done and yielded results as indicated table 5.13.

**Table 5.13: Coefficients of Supply Chain Optimization and Performance of Wagagai Limited**

**Coefficients [a]**

| Model | Un standardized Coefficients | | Standardized coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| 1 (Constant) | 29.252 | 28.021 | | 1.231 | .001 |
| **Supply Chain Optimization** | .025 | .021 | .641 | 21.146 | .004[a] |

a. Performance of Wagagai Limited

The analysis of the coefficients in table 5.13 of supply chain optimization and performance of Wagagai Limited shows the values of $\boldsymbol{\beta}$ = 0.641, ***t*** = 21.146 and ***p*** = 0.004 <0.05. The null hypothesis $H_{O2}$ was rejected and the alternative $H_{A2}$ supported. This implies that supply chain optimization and performance of Wagagai Limited are statistically related and positively influence each other. Therefore, a positive change in supply chain optimization will bring about a significant positive improvement in the performance of Wagagai Limited.

# CHAPTER SIX

# MARKETING PRACTICES AND PERFORMANCE OF WAGAGAI LIMITED

## 6.1 Introduction

The study sought to examine the extent to which marketing practices have influenced the performance of Wagagai Limited. This chapter provides presentations, analyses and interpretation of findings on the relationship between marketing practices and the performance of Wagagai Limited. It gives descriptive and inferential statistics presented in tables and matrices of results relating to the study. These results are as given in table 6.1 and 6.13.

## 6.2 Market segmentation for effective marketing and distribution

The study sought to establish whether Wagagai Limited has segmented its market for effective marketing and distribution and yielded findings as indicated in table 6.1.

**Table 6.1: Market segmentation for effective marketing and distribution**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 2 | 2.9 | 2.9 |
| | Disagree | 4 | 5.8 | 8.7 |
| | Not Sure | 11 | 15.9 | 24.6 |
| | Agree | 31 | 44.9 | 69.5 |
| | Strongly Agree | 21 | 30.4 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 6.1 show 2.9% to have strongly disagreed, 5.8% disagreed, 15.9% were not sure, 44.9% agreed, and 30.4% strongly agreed. The majority respondents that is, 75.3% agreed

to Wagagai Limited segmenting its market for effective marketing and distribution. And in an interview with the Marketing and Sales Manager, he hinted that,

> *"we do segment our market because the company has different customers coming with different expectations and characteristics…so to satisfy each segment we have to customize our packaging and distribution to suit expectations".*

This implies that Wagagai Limited undertakes segmentation of its markets in order to have more effective distribution and deliver optimal levels of satisfaction to its customers. However, with the 24.7% minority in disagreement, it implies that there are market segmentation gaps that need to be closed in order for Wagagai Limited to realise improved performance.

### 6.3 Use of push and pull strategies in marketing

Examining whether Wagagai Limited uses push and pull strategies in marketing to ensure competitiveness of prices was critical to this study and yielded findings as shown in table 6.2.

**Table 6.2: Use of push and pull strategies in marketing**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 5 | 7.2 | 7.2 |
| | Disagree | 10 | 14.5 | 21.7 |
| | Not Sure | 5 | 7.2 | 28.9 |
| | Agree | 28 | 40.6 | 69.5 |
| | Strongly Agree | 21 | 30.4 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 6.2 indicate that, 7.2% strongly disagreed to this view, 14.5% disagreed, 7.2% were not sure, 40.6% agreed, and 30.4% strongly agreed to Wagagai Limited using push and pull

strategies in marketing to ensure competitiveness of prices. With the 71% majority in agreement, it implies the significance of push and pull strategies in marketing of floral products. But specific focus would be put on pull strategies as interviews with the Marketing and Sales Manager quote him saying;

> "*One of the core reasons of customizing our packaging and distribution is to have our customers pull the products from us. This helps more added value, less cost and ease of distribution".*

This implies the significant role of pull and push strategies to making Wagagai Limited more competitive in the market. However, 29.0% in disagreement imply significant inefficiencies or low level of significance of push and pull strategies to marketing of floricultural products.

### 6.4 Obtaining knowledge of customer requirements

Obtaining knowledge of customer requirements is critical to satisfying the unique demands of customers. Hence, the study sought to examine whether Wagagai Limited has obtained knowledge of customer requirements to be more effective and responsive to customers and findings were as shown in table 6.3.

**Table 6.3: Obtaining knowledge of customer requirements**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 6 | 8.7 | 8.7 |
| | Disagree | 4 | 5.8 | 14.5 |
| | Not Sure | 5 | 7.2 | 21.7 |
| | Agree | 31 | 44.9 | 66.6 |
| | Strongly Agree | 23 | 33.3 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

From table 6.3, 8.7% respondents strongly disagreed, 5.8% disagreed, 7.2% were not sure, 44.9% agreed and 33.3% strongly agreed to Wagagai Limited obtaining knowledge of customer requirements. With the 78.2% in agreement, it implies the significance of obtaining knowledge of customer requirements by floricultural firms to be more effective and responsive to customers. However, the 21.8% respondents in disagreement indicate low integration of the concern for knowledge of customer requirements that has hindered floricultural firms from achieving optimal performance in the supply chain.

### 6.5 Wagagai Limited conducting market research

The study sought to examine whether Wagagai Limited conducts a market research to assess price sensitivity and customer needs and findings were as shown in table 6.4.

**Table 6.4: Wagagai Limited conducting market research**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 8 | 11.6 | 11.6 |
| | Disagree | 7 | 10.1 | 21.7 |
| | Not Sure | 2 | 2.9 | 24.6 |
| | Agree | 27 | 39.1 | 63.7 |
| | Strongly Agree | 25 | 36.2 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 6.4 show that, 11.6% strongly disagreed, 10.1% disagreed, 2.9% were not sure, 39.1% agreed and 36.2% strongly agreed with Wagagai Limited conducting market research to assess price sensitivity and customer needs. With 75.3% respondents in agreement, it implies that market research is an important marketing practice of floricultural firms seeking to establish

price sensitivity and customer needs. However, 24.7% of respondents disagreed implying that there is possible laxity by Wagagai Limited to undertake market research so as to effectively price its products and respond to the needs of customers.

### 6.6 Streamlined routines and practices in marketing and distribution

Operating streamlined routines and practices in marketing and distribution within floral supply chains is important to the performance of floricultural firms. Hence, an investigation on this happening in Wagagai Limited yielded findings as indicated in table 6.5.

**Table 6.5: Streamlined routines and practices in marketing and distribution**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 3 | 4.3 | 4.3 |
| | Disagree | 7 | 10.1 | 14.4 |
| | Not Sure | 4 | 5.8 | 20.2 |
| | Agree | 34 | 49.3 | 69.5 |
| | Strongly Agree | 21 | 30.4 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 6.5 show 4.3% to have strongly disagreed, 10.1% disagreed, 5.8% were not sure, 49.3% agreed and 30.4% strongly agreed to Wagagai Limited operates streamlined routines and practices in marketing and distribution. With the majority 79.7% in agreement, it implies that maintaining routine in marketing and distribution is critical to achieving improved customer satisfaction and reliability of service by floricultural firms. This was harmony with interview findings in which the Standards and Compliance Manager noted that,

*"....as a standard against loss of potency and integrity, maintaining routine is essential to production and distribution of flowers and cuttings. Failure to maintain routine causes significant loss to the firm".*

This implies that, routine is a critical component of effective marketing and distribution practices in the floricultural sector. However, the 20.3% respondents in disagreement indicate the low commitment of Wagagai Limited to maintaining routine in marketing and distribution.

### 6.7 Establishing specialized outlets for floral products

The study sought to examine whether Wagagai Limited has established specialized outlets for their floral products. Findings to this were as indicated in table 6.6.

**Table 5.6: Establishing specialized outlets for floral products**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 8 | 11.6 | 11.6 |
| | Disagree | 5 | 7.2 | 18.8 |
| | Not Sure | 7 | 10.1 | 28.9 |
| | Agree | 31 | 44.9 | 73.8 |
| | Strongly Agree | 18 | 26.1 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 4.12 indicate that, 11.6% strongly disagreed, 7.2% disagreed, 10.1% were not sure, 44.9% agreed and 26.1% strongly agreed to Wagagai Limited having established specialized outlets for their floral products. With the 71.0% majority respondents in agreement, it implies that the establishment of specialized outlets for floral products is essential to the performance of floricultural firms like Wagagai Limited. However, 29% in disagreement

indicate that the need to have expanded specialized outlets in the markets for floral products of firms operating in floral supply chains.

### 6.8 Varied production and distribution processes

The study sought to examine whether Wagagai Limited has varied its production and distribution processes to meet varied product specifications. Findings to this were as indicated in table 6.7.

**Table 6.7: Varied production and distribution processes**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 4 | 5.8 | 5.8 |
| | Disagree | 6 | 8.7 | 14.5 |
| | Not Sure | 4 | 5.8 | 20.3 |
| | Agree | 29 | 42.0 | 62.3 |
| | Strongly Agree | 26 | 37.7 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 6.7 show that, 5.8% strongly disagreed, 8.7% disagreed, 5.8% were not sure, 42.0% agreed and 37.7% strongly agreed to Wagagai Limited having varied its production and distribution processes to meet varied product specifications. Majority respondents agreed that is, 79.7% implying that compliance with varied floral product specifications requires varied production and distribution processes in the supply chain. However, the 20.3% in disagreement indicate gaps in conforming to varied product specifications in the production and distribution practices of Wagagai Limited.

### 6.9 Nurturing a healthy relationship with customers

The study sought to examine whether marketing processes of Wagagai Limited have nurtured a healthy relationship with customers and findings to this were as shown in table 6.8.

**Table 6.8: Nurturing a healthy relationship with customers**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 3 | 4.3 | 4.3 |
| | Disagree | 2 | 2.9 | 7.2 |
| | Not Sure | 11 | 15.9 | 23.1 |
| | Agree | 27 | 39.1 | 62.2 |
| | Strongly Agree | 26 | 37.7 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 6.8 show that 4.3% strongly disagreed, 2.9% disagreed, 15.9% were not sure, 39.1% agreed and 37.7% strongly agreed to marketing processes of Wagagai Limited nurturing a healthy relationship with customers. With the 76.8% respondents in agreement, it is implied that nurturing a healthy relationship with customers is essential to success of floricultural firms in their markets. This had similar position in interview results where one supervisor hinted that,

> *".....given the perishable nature of our products, keeping our customers close is vital for successful operations"*

This implies the significance of nurturing close collaborative relationships with customers in boosting the performance of floricultural firms and overall floral supply chain performance. However, the minority 23.3% in disagreement indicate the low significance assigned to relationships with customers by Wagagai Limited.

### 6.10 Flexible marketing systems to address market dynamics

Maintaining flexible marketing systems is critical to delivering floral products reliably and on-time. The study sought to examine whether Wagagai Limited maintains a flexible marketing systems to address market dynamics and findings to this were as shown in table 6.9.

**Table 6.9: Flexible marketing systems to address market dynamics**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 2 | 2.9 | 2.9 |
| | Disagree | 2 | 2.9 | 5.8 |
| | Not Sure | 16 | 23.3 | 29.1 |
| | Agree | 26 | 37.7 | 66.8 |
| | Strongly Agree | 23 | 33.2 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings in table 6.9 show that 2.9% strongly disagreed, 2.9% disagreed, 23.2% were not sure, 37.7% agreed and 33.3% strongly agreed that Wagagai Limited maintains a flexible marketing system to address market dynamics. The majority respondent that is 71.0% in agreement imply that flexible marketing systems are an important part of floral supply chain management to address market dynamics in customer requirements, reliable and on-time delivery. However, the 29.0% in disagreement low commitment by Wagagai Limited to adopting flexible marketing which hamper effective performance.

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### 6.11 Keeping track of market information systems

The study sought to examine whether Wagagai Limited has kept track of market information systems for innovations in the market and findings to this were as shown in table 6.10.

**Table 6.10: Keeping track of market information systems**

| | | Frequency | Percent | Cumulative Percent |
|---|---|---|---|---|
| Valid | Strongly Disagree | 6 | 8.7 | 8.7 |
| | Disagree | 4 | 5.8 | 14.5 |
| | Not Sure | 7 | 10.1 | 24.6 |
| | Agree | 37 | 53.6 | 78.2 |
| | Strongly Agree | 15 | 21.7 | 100.0 |
| | **Total** | **69** | **100.0** | |

*Source: Primary data, 2018*

Findings indicate that 8.7% strongly disagreed, 5.8% disagreed, 10.1% were not sure, 53.6% agreed and 21.7% strongly agreed. With the majority 75.3% in agreement to Wagagai Limited keeping track of market information systems for innovations. This has provided a base for performance improvement in floricultural firms. However, the 24.7% in disagreement imply that Wagagai Limited does not keep track of market information systems thus limiting its capacity to leverage market competitiveness.

### 6.12 Correlation of Marketing Practices and the Performance of Wagagai Limited

To determine the strength of the relationship between marketing practices and the performance of Wagagai Limited, a correlation analysis was done and produced results as indicated in table 6.11.

**Table 6.11: Correlation of Marketing Practices and the Performance of Wagagai Limited**

**Correlations**

| | | Marketing Practices | Performance of Wagagai Limited |
|---|---|---|---|
| **Marketing Practices** | Pearson Correlation | 1 | .752** |
| | Sig. (2-tailed) | | .001 |
| | N | 69 | 69 |
| **Performance of Wagagai Limited** | Pearson Correlation | .752** | 1 |
| | Sig. (2-tailed) | .001 | |
| | N | 69 | 69 |

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

From table 6.11, correlation results indicated a strong positive relationship between marketing practices and the performance of Wagagai Limited given **r** = 0.752 at significance levels **p** = 0.001 less than 0.05. This implies that an improvement in marketing practices will lead to a significant improvement in the performance of Wagagai Limited.

### 6.13 Regression analysis

Regression analysis was performed to support the results of correlation analysis in establishing the relationship between marketing practices and the performance of Wagagai Limited. Results were as indicated in table 6.12

**Table 6.12: Model Summary of Marketing Practices and the Performance of Wagagai Limited**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .752[a] | .565 | .551 | .16233 |

**a.** Predictors: (Constant), Marketing Practices

With ***r*** = 0.752 in the table 6.12, it can be concluded that marketing practices has a strong positive relationship with the performance of Wagagai Limited. This means a positive change in

the marketing practices will lead to a positive improvement in performance of Wagagai Limited by 75.2%. And the coefficient of determination i.e. the Adjusted ***R*** Square value of 0.551 suggests that this improvement in the performance of Wagagai Limited can be 55.1% predicted by a positive change in marketing practices in its floral supply chain. The remaining 44.9% change in the performance of Wagagai Limited is explained by other factors not considered in this model.

### 6.14 Standardized coefficients

Establishing standardized coefficients of the relationship between marketing practices and Performance of Wagagai Limited was done and yielded results as indicated table 6.13.

**Table 6.13: Coefficients of Marketing Practices and Performance of Wagagai Limited**

**Coefficients [a]**

| Model | Un standardized Coefficients | | Standardized coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| 1 (Constant) | 31.113 | 15.245 | | 1.113 | .002 |
| **Marketing Practices** | .014 | .028 | .752 | 15.868 | .001[a] |

a. Performance of Wagagai Limited

The analysis of the coefficients in table 6.13 of marketing practices and performance of Wagagai Limited yielded the values of $\boldsymbol{\beta}$ = 0.752, $\boldsymbol{t}$ = 15.868 and $\boldsymbol{p}$ = 0.001 <0.05 hence, the null hypothesis $H_{O3}$ was rejected and the alternative $H_{A3}$ was supported. This implies that marketing practices and performance of Wagagai Limited are statistically related and positively influence each other. Therefore, a positive change in marketing practices will bring about a significant positive improvement in the performance of Wagagai Limited.

# CHAPTER SEVEN

# HARMONISATION OF SUPPLY CHAIN MANAGEMENT AND PERFORMANCE OF FLORICULTURAL FIRMS

## 7.1 Introduction

The study sought to examine the relationship between supply chain management and the performance of floricultural firms drawing from the results of the investigation in Wagagai Limited. This chapter provides a link between the findings of the study against the ideal practices of supply chain management and the performance of Wagagai Limited as established by the reviewed literature. Specifically, it harmonizes the elements of supply chain management that is, logistics processes, supply chain optimization, and marketing within floral supply chains with the performance metrics of firms operating floral supply chains.

## 7.2 Multivariate analysis

To establish the multi-collinear relationship of the supply chain management elements studied i.e. logistics processes, supply chain optimization, and marketing practices with the performance of Wagagai Limited, a multivariate analysis was done. This involved multiple regression analysis, analysis of variance and establishing standardized coefficients. The results were as indicated in tables 7.1, 7.2, and 7.3.

### 7.2.1 Multiple regression analysis results

In order to examine further the relationship between logistics processes, supply chain optimization, and marketing practices with the performance of Wagagai Limited, a multiple regression analysis was performed. The results obtained were as summarized in table 7.1.

**Table 7.1: Model Summary**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .643[a] | .413 | .399 | 1.14035 |

**a**. Predictors: (Constant), Supply Chain Management (LPs, SCO, MPs)

From table 7.1, it can be drawn that the multiple regression coefficient *R* using all predictors i.e. logistics processes, supply chain optimization, and marketing practices simultaneously, is 0.643 and adjusted R square is 0.399. This implies that a 64.3% change in the performance of Wagagai Limited can be predicted by a 39.9% value change in the three predictors. The remaining 35.7% change in the performance of Wagagai Limited is explained by other factors not investigated in this study.

### 7.2.2 Analysis of variance (ANOVA) results

The ANOVA table 7.2 shows that F = 5.268 and the value of sig is 0.001 i.e. $p = 0.001 < 0.05$. This means that the combination of logistics processes, supply chain optimization, and marketing practices give a positive statistical prediction of the performance of Wagagai Limited.

**Table 7.2: Analysis of variance between supply chain management and the performance of Wagagai Limited**

**ANOVA[b]**

| Model | | Sum of squares | df | Mean square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 250.706 | 3 | 83.569 | 5.268 | .001[a] |
| | Residual | 1031.033 | 65 | 15.862 | | |
| | Total | 1281.739 | 68 | | | |

**a.** Predictors: (Constant), Supply Chain Management (LPs, SCO, MPs)
**b.** Dependent Variable: Performance of Wagagai Limited

The variance in the performance of Wagagai Limited is 5.26% predicted by logistics processes, supply chain optimization, and marketing practices. The 94.3% prediction of variance in the performance of Wagagai Limited is brought about by other factors not investigated by the study.

**Table 7.3 Coefficients of supply chain management and the performance of Wagagai Limited**

**Coefficients [a]**

| Model | Unstandardized Coefficients | | Standardized coefficients | t | Sig. |
|---|---|---|---|---|---|
| | B | Std. Error | Beta | | |
| 1 (Constant) | 27.771 | 4.245 | | 6.542 | .000 |
| **Logistics Processes** | .133 | .132 | .124 | 1.103 | .002 |
| **Supply Chain Optimization** | .301 | .233 | .304 | .132 | .000 |
| **Marketing Practices** | .233 | .411 | .201 | .125 | .001 |

**a**. Dependent Variable: Performance of Wagagai Limited

Table 7.3 further indicates a positive influence of the supply chain management constructs on the performance of Wagagai Limited. In other words, performance of Wagagai Limited is positively influenced by logistics processes with B=.124, t=1.103, p = 0.002 <0.05; supply chain optimization with B =.304, t=0.132, p = 0.000 < 0.05; and marketing practices with B=.201, t=.125, p = 0.001 < 0.05. Given the sample prediction model of estimates $Y^1=b_o +b_1 X_{Ii} + b_2 X_{2i}$, from table 7.3 performance of Wagagai Limited = 27.77 + 0.133 (Logistics Processes) + 0.301 (Supply Chain Optimization) + 0.233 (Marketing Practices). This means that $b_0$ = 27.77 is the predicted level of performance of floricultural firms.

However, a 1 point change in the prediction i.e. logistics processes, supply chain optimization, and marketing practices brings about a predicted 0.133, 0.301 and 0.233 point increase in the performance of Wagagai Limited respectively. This confirmed by the Beta values standardized

coefficients 0.132, 0.304 and 0.231 at Sig. values 0.002, 0.000 and 0.001 all less than 0.05. It is noted that Supply Chain Optimization which has a higher prediction coefficient 0.301 and 0.304 is the most significant predictor of performance changes within floricultural firms like Wagagai Limited. These three factors i.e. constants positively affect the performance of Wagagai Limited. Other factors account for 33.3% of the change in the performance of Wagagai Limited.

### 7.3 Logistics processes and the performance of floricultural firms

The study sought to evaluate the relationship between logistics processes and the performance of Wagagai Limited. It is on the study finding that there is a strong positive relationship between logistics processes and performance of Wagagai Limited. Therefore, an improvement logistics processes will bring about a significant improvement in the performance of floricultural firms.

According to Rashton and Croucher, (2011), for most organizations it is possible to draw up a familiar list of key areas representing the major components of distribution and logistics. These will include transport, warehousing, inventory, packaging and information. This list can be 'exploded' once again to reveal the detailed aspects within the different components. The study found out that various components of logistics like transport, warehousing, inventory control, packaging, quality control, inter alia are integrated in its floral supply chains to achieve desired performance of floral firms like Wagagai Limited. Hence, floricultural firms operating effective logistics processes in their supply chain will have a significant improvement in their performance.

Rashton and Croucher, (2011) further advance that, logistics really looks at three types of movement: i*) Movement of raw materials:* where materials are moved from supplies *into* the organization; ii) *Movement of work-in-process:* where materials are used *within* the organization;

and iii) *Movement of finished goods:* where materials are moved from the organization out to their customers. The study on Wagagai Limited found that it operates temperature controlled transportation, packaging, storage and retrieval from warehouses, shipping and distribution to customers. Therefore, in their inward, work-in-process, and distribution processes it is critical for floricultural firms to have temperature controlled systems for improved integrity and assurance of quality to customers.

Lysons and Farrington (2006) advance four main aims of inventory management in any logistics system are to: provide both internal and external customers with the required service levels in terms of quantity and order rate fill; ascertain present and future requirements for all types of inventory to avoid over stocking while avoiding 'bottlenecks' in production; keep costs to a minimum by variety reduction, economical lot sizes and analysis of costs incurred in obtaining and carrying inventories; and provide upstream and downstream inventory visibility in the supply chain. The study established that inventory management is a significant logistics component to satisfaction of customers in floral supply chains. It was also established that Wagagai Limited has a customer service policy to guide staff involved in its supply chain operations. Hence, the performance of floricultural firms can be improved by integrating a customer service policy in their logistics system.

Hesket, Glaskowsky and Ivie, (1993) advance that logistics processes should facilitate movement and the co-ordination of supply and demand in the creation of time and place utility. It is the positioning of resource at the right time, in the right place, at the right cost, at the right quality (Chartered Institute of Logistics and Transport (UK), 2005). The study established that logistics processes of Wagagi Limited have been integrated and collaborated to have a collective concern for performance improvement. It also found that Wagagai Limited has efficient information

processes to facilitate real-time flow and response to stakeholder needs. Thus, for optimized performance, floricultural firms should have integrated and collaborated logistics processes as well as efficient information processes.

Rashton and Croucher, (2011) indicate that logistics processes should aid the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customer requirements. The study found out that Wagagai Limited has been able to leverage the floral export market through good packaging and labeling practices that have been customized to meet customer requirements and sustained product integrity especially in the export markets. It also established that logistics processes of Wagagai Limited like order processing are fast to ensure greater responsiveness to customer requirements. This the need to customize logistics to customer requirements is critical to their improved performance.

### 7.4 Supply chain optimization and the performance of floricultural firms

Lysons and Farrington (2006) advance that; supply chain optimization is concerned with removal of non-value adding steps or processes in the supply chain. It is concerned with removal of supply chain inefficiencies. It is defined as the management of complicated supply chains in their entirety with the objectives of synchronizing all value-adding production and distribution activities and the elimination of such activities that do not add value. The study established that Wagagai Limited undertakes production planning to satisfy local and export demands as well as removing supply chain inefficiencies or non-value adding steps or processes in the supply chain. So, floricultural firms achieve improved performance through the removal of non-value adding activities or inefficiencies in their supply chains.

Supply chain optimization emphasizes the importance synchronizing production and distribution activities, eliminating activities that do not add value, providing the highest possible levels of customer service, achieving cost effectiveness, achieving maximum productivity from resources expended or assets employed, optimizing enterprise profits, and achieving maximum time compression (Lysons and Farrington, 2006). The study established that Wagagai Limited holds inventories at various locations to buffer distribution operations. This has enabled the achievement of maximum time compression and the highest possible levels of customer service.

Saxena (2009) advances the performance metrics critical to optimization of floral supply chains as: production and operational efficiency, responsiveness to customer requirements, competitiveness of prices, quality assurance and integrity of floral products, meeting specifications, reduced operational costs, reliability, and on-time delivery. The study on Wagagai Limited established the significance of inventory holding as being real-time in order to facilitate distribution in mainly foreign consumer markets. Also, it was established that Wagagai Limited consolidates orders to achieve economies of scale in processing, transportation and storage. These are critical to achieving competitiveness of prices, quality assurance and integrity of floral products, meeting specifications, reduced operational costs, reliability, and on-time delivery.

In addition, in line with the postulation of Saxena (2009), the study found out that Wagagai Limited maintains a dynamic inventory policy to match the dynamics of the floral product market. This is critical to ensuring on-time and reliable delivery of products to markets by floricultural firms. And as a way of optimizing quality of products, the study found Wagagai Limited to involve independent inspectors. With 71.0% respondents in agreement, it implies that Wagagai Limited has established disease control programmes to ensure disease free propagation and production. This is important to production of floral products that meet health and safety

standards, and achieving competitiveness in floral supply chains requires adopting a flexible marketing system.

According to Lysons and Farrington (2006), critical factors in supply chain optimization include: reduction of uncertainty; collaboration; benchmarking; key performance indicators (KPIs); and leadership. Uncertainties like production breakdowns, and lack of clear understanding of customers of floral products may fail performance floricultural firms. The study established that establishing certainty of demand and supply is critical to optimizing inventory holding in Wagagai Limited and that, demand and supply certainty are critical to inventory holding and performance of floricultural firms like Wagagai Limited.

### 7.5 Marketing practices and the performance of Wagagi Limited

According to Gillingham (2007) segmentation of customer markets is critical to optimizing marketing efforts in floral supply chains. In local customer segments supply-chain relationships can be easy, given existing personal relationships between growers and florists. However, it was also reported that personal relationships could compromise business relationships at times, resulting in broken supply. The study on Wagagai Limited established that nurturing a healthy relationship with customers is essential to success of floricultural firms in their markets. Also the study Wagagai Limited indicated that undertaking segmentation of markets of floricultural firms is essential to having more effective distribution and deliver optimal levels of satisfaction to its customers.

According to Ruud and Nico, (2014), the profitability of flower arrangements and flower products depends on the number of shared special occasions in a year and the popularity of a high-quality service that prevails. On shared special occasions, the price of flowers/plants and

flower products is twice or three times the normal price. Regarding service, business may prosper and expand as a result of preferred supplier status, or favoritism, by business houses and government bodies. The study found Wagagai Limited to vary its production and distribution processes to meet varied product specifications. It also keeps track of market information systems for innovations. This indicates the importance of varied production and distribution processes as well as tracking of market information systems to performance improvement in floricultural firms.

The study found Wagagai Limited using push and pull strategies in marketing to ensure competitiveness of prices for its floral products. Gillingham, (2007) advances that, in terms of supply-chain strategies by growers for market segments, a high level of operational efficiency, or high push strategy, may be needed because most of their customers buy for commercial reasons. For the level of responsiveness to customer needs, a moderate pull strategy rather than a low pull strategy, as in local consumer segment, is called for. This is because florists are now regular, identifiable customers of growers. Hence, floricultural firms need to adopt pull and push strategies that will enable them gain competitiveness in the market.

According to Ruud and Nico, (2014) local consumer segment generally patronizes shows, festivals and roadside stalls. For new floricultural growers, taking products to these venues is a low-cost test-market practice and an opportunity to interact with customers directly. For those who have other channels through which to sell, this channel is an outlet to make extra income. In terms of supply approach for this market segment, it is impractical for growers to cater for customer needs at all times, given a wide spectrum of customers in this marketing channel. A combination of moderate push and low pull strategies can be adequate. A moderate, rather than low, efficiency strategy is needed because this segment expects competitive prices. A low

responsiveness strategy will be satisfactory because customer needs are divergent. The study on Wagagai Limited found out that maintaining routine in marketing and distribution is critical to achieving improved customer satisfaction and reliability of service by floricultural firms.

Ruud and Nico, (2014) further add that, an integral part of effective marketing in floral supply-chain is good business practices, such as reliability and delivering on time to the consolidation depot. Supply-chain strategies for this market segment should be of high operational efficiency in order to offer high-quality products with competitive prices to cross-regional business customers. Hence, the business customers are more price sensitive than in the first two segments**.** A high level of responsiveness to customer needs is needed. Compared with the local business segment, more market research through 'walking the chain' activities would be beneficial for growers serving this market segment. The study established that Wagagai Limited conducts market research to assess price sensitivity and customer needs imply that market research is an important marketing practice of floricultural firms seeking to establish price sensitivity and customer needs.

According to Ruud and Nico, (2014) floral business customers who are most likely wholesale distributors will have specific requirements and demand high responsiveness at a reasonable price. Supply-chain strategies for this overseas market segment demand a high level of operational efficiency coupled with a very high level of responsiveness to realise customer specifications. A responsiveness requirement may be to meet precise product specifications through intimate working knowledge of the end-customers' requirements and practices. In the study, it was established that Wagagai Limited operates flexible marketing systems implying that they are an important part of floral supply chain management to address market dynamics in customer requirements, reliable and on-time delivery.

# CHAPTER EIGHT

# SUMMARY, CONCLUSION AND RECOMMENDATIONS

## 8.1 Introduction

The purpose of the study was to examine the relationship between supply chain management and the performance of floricultural firms with a case study of Wagagai Limited. This chapter presents the summary of findings based on the objectives of the study, conclusion and the recommendations to Wagagai Limited and overall improvement in the performance of floricultural firms.

## 8.2 Summary of findings

The study was guided by the following objectives;

i) To evaluate the relationship between logistics processes and the performance of Wagagai Limited.

ii) To establish how supply chain optimization practices have enhanced the performance of Wagagai Limited.

iii) To examine the extent to which marketing practices have influenced the performance of Wagagai Limited.

### 8.2.1 Logistics processes and the performance of Wagagai Limited

The study sought to evaluate the relationship between logistics processes and the performance of Wagagai Limited. The study findings indicate that Wagagai Limited operates a temperature controlled logistics system, collaboration and integration of logistics is visible, packaging and labeling of floral products is ideal to meet customer requirements and ensure integrity as well as

equipment and vehicle maintenance being undertaken routinely to avoid mechanical breakdowns in its supply chain operations.

The study further established that Wagagai Limited has efficient information processes to facilitate real-time flow and response to stakeholder needs, order processing is fast to ensure greater responsiveness to customer requirements, has established quality control systems to ensure quality floral products are delivered to customers, has a customer service policy to guide staff involved in its supply chain operations, and has significant inventory controls that satisfy its customers in floral supply chains. However, there is need for improved integration and collaboration for more optimal performance results, making improvements in packaging and labeling in order have optimal satisfaction and improved integrity of its logistics processes, should have routine maintenance of equipment and vehicles, and have more integrated logistics processes so as to bring about improved performance of Wgagai Limited especially in the foreign markets.

### 8.2.2 Supply chain optimization practices and the performance of Wagagai Limited

The study sought to establish how supply chain optimization practices have enhanced the performance of Wagagai Limited. Findings revealed that Wagagai Limited holds inventories at various locations to buffer distribution operations, undertakes production planning to satisfy local and export demands, consolidates orders to achieve economies of scale in processing, transportation and storage, operates a dynamic inventory policy necessary to address the dynamics of floral supply chain markets, and ascertains demand for various products in order to establish production levels and the inventory holding that all essential to optimization of its floral supply chain operations and performance.

The study further revealed that Wagagai Limited uses independent quality inspections to optimize quality in its floral supply chains, has established disease control programmes to ensure disease free propagation and production, adopted a flexible marketing system, achieving productivity from resources expended in its supply chain, and operates an effective temperature controlled supply chain that are critical aspects of optimizing floral supply chains and achieving improved performance of floricultural firms. However, the study found Wagagai Limited to have less cautious inventory holding to buffer distribution, have production planning gaps which failed the optimization of supply volumes especially in the EU markets as was revealed in the 2015/16 Export Assessment Report, gaps in demand and supply certainty to optimize inventory holding, and had ineffective disease control programmes that has hampered the optimization of health and safety in its supply chain as well as affecting its competitiveness.

### 8.2.3 Marketing practices and the performance of Wagagai Limited

The study also set out to examine the extent to which marketing practices have influenced the performance of Wagagai Limited. The study found out that Wagagai Limited undertakes market segmentation for effective marketing and distribution, uses push and pull strategies in marketing to ensure competitiveness of prices, seeks to obtaining knowledge of customer requirements to be more effective and responsive to customers, undertakes market research is an important marketing practice of floricultural firms seeking to establish price sensitivity and customer needs, and maintains routine in marketing and distribution is critical to achieving improved customer satisfaction and reliability of service by floricultural firms.

The study further found Wagagai Limited to have established specialized outlets for floral products, operating varied production and distribution processes, nurturing a healthy relationship with customers, operating flexible marketing systems to address market dynamics in customer

requirements, reliable and on-time delivery, and keeping track of market information systems for innovations. However, findings revealed the need to have expanded specialized outlets in the markets for floral products of firms operating in floral supply chains, laxity by Wagagai Limited to undertake market research, significant inefficiencies or low level of significance of push and pull strategies to marketing of floricultural products, and market segmentation gaps that need to be closed in order for Wagagai Limited to realise improved performance.

### 8.3 Conclusion

Examining the relationship between logistics processes and the performance of Wagagai Limited the study concludes that there is a strong positive relationship between logistics processes and performance of Wagagai Limited given **r** = 0.708 at significance levels **p** = 0.001 less than 0.05. Therefore, an improvement logistics processes will bring about a significant improvement in the performance of Wagagai Limited. Hence, floricultural firms with streamlined and improved logistics processes in their supply chain will have significant improvement in their performance.

Establish how supply chain optimization practices have enhanced the performance of Wagagai Limited that a moderately strong positive relationship between supply chain optimization and the Performance of Wagagai Limited given **r** = 0.641 at significance levels **p** = 0.000 less than 0.05. This implies that an improvement in supply chain optimization practices will lead to a moderately significant improvement in the performance of Wagagai Limited. Therefore, floricultural firms should improve their supply chain optimization practices in order to have improved performance.

The study examination of the extent to which marketing practices have influenced the performance of Wagagai Limited concluded that there is a strong positive relationship between

marketing practices and the performance of Wagagai Limited given **r** = 0.752 at significance levels **p** = 0.001 less than 0.05. This implies that an improvement in marketing practices will lead to a significant improvement in the performance of Wagagai Limited. Hence, floricultural firms seeking to leverage performance in floral supply chains should focus on instituting effective marketing practices.

The study concluded that there a moderately strong positive relationship between supply chain management practices and performance of floricultural firms. Logistics processes, supply chain optimization, marketing practices and performance of Wagagai Limited yielded a correlation coefficient of 0.643 and adjusted R square 0.399. This implies that a 64.3% change in the performance of Wagagai Limited can be predicted by a 39.9% value change in the three predictors. The remaining 35.7% change in the performance of Wagagai Limited is explained by other factors not investigated in this study. Since all these were attained at sig. values less than 0.05, the null hypothesis that there is no significant relationship between supply chain management practices and performance of floricultural firms was rejected and the alternative adopted.

### 8.4 Recommendations

The study on the relationship between supply chain management and the performance of Wagagai Limited gave rise to several recommendations applicable to the firms operating in floral supply chains.

Floricultural firms like Wagagai Limited need to improve integration and collaboration of logistics processes for more optimal performance results. Improvements in packaging and

labeling will lead to optimal satisfaction and improved integrity of logistics processes which will subsequently bring about improved performance of floricultural firms.

Floricultural firms should address inefficiencies in quality management systems within their logistics processes and have cautious inventory holding to buffer distribution so as to realise their performance targets.

Wagagai Limited and other floricultural firms should intensify production planning as a way of optimizing the supply chain. In such planning, firms should focus on harmonizing production with local and export demand of supply volumes especially in the EU markets.

Floricultural firms should establish demand and supply certainty in optimizing inventory holding so as to improve effectiveness and efficiency in its operations. Also, intensity in quality controls and effectiveness of disease control programmes optimizes quality, health and safety in its supply chain as well as improve its competitiveness especially in the foreign markets.

Floricultural firms need to move towards establishing a flexible marketing system that will help realise greater competitiveness and reliability in markets. And in such a flexible system, floricultural firms should adopt push and pull strategies in marketing and pricing of floral products.

Much emphasis should be on undertaking market research so as to effectively price its products and respond to the needs of customers. In doing market research, keeping track of market information systems will boost their capacity to leverage market competitiveness.

### 8.5 Suggested areas of further research

The study suggests that further research may be conducted on:

- Quality management and customer satisfaction in the floricultural sector.
- Employee Training and regulatory compliance in the floricultural sector. .
- Regulatory compliance and operations safety in floral supply chains.

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## APPENDICES

### Appendix I: Questionnaire

**Dear Sir/Madam,**

I am **Katuura Dedan** a student of Master of Procurement and Logistics Management at Nkumba University. I am conducting a research on "**Supply chain magement and performance of floricultural firms: A Case Study of Wagagai Limited**" in partial fulfillment of the requirements for the Award of the above Degree. You have been selected to participate and hereby requested respond to the questions in this study. The information got from you will be kept confidential and will be used strictly for academic purposes.

Thank you so much for your cooperation.

**Section A: Background Information**

Pleas mark the applicable box with a tick

1. **Age (years)**

| Below 26 | 26-35 | 36-45 | 46-55 | Above 55 |
|---|---|---|---|---|
| | | | | |

2. **Sex**

Female ☐ Male ☐

3. **Level of Education**

| Masters | Bachelors | Diploma | Certificate | Others (specify) |
|---|---|---|---|---|
| | | | | |

4. **What is your post/department of occupation**?

Directors ☐ Manager ☐ Supervisors ☐ Customs Health Inspectors ☐
Production Department ☐ Health and Safety ☐
Quality and Standards Compliance ☐ Transport and Storage ☐
Equipment Mnagement and Maintenance ☐ Marketing and Sales ☐

**5. Marital status**

| Single | Married | Divorced | Separated | Widowed | Others (specify) |
|---|---|---|---|---|---|
| | | | | | |

**6. Your period of work with Wagagai Limited (years)**

| Below 6yrs | 6-10yrs | 11-15yrs | 16-20yrs | Above 20yrs |
|---|---|---|---|---|
| | | | | |

***For sections B, C, D and E use the scale/ranking below to tick in the box that corresponds with number that best indicates your opinion on the statement or question.***

| ***Scale*** | ***1*** | ***2*** | ***3*** | ***4*** | ***5*** |
|---|---|---|---|---|---|
| ***Opinion*** | *Strongly Disagree* | *Disagree* | *Neutral* | *Agree* | *Strongly Agree* |

**SECTION B: Logistics processes of Wagagai Limited**

| **No.** | **Item** | **1** | **2** | **3** | **4** | **5** |
|---|---|---|---|---|---|---|
| 1. | Wagagai Limited operates a temperature controlled transport and storage system for floral products | | | | | |
| 2. | Collaboration and integration of logistics is visible in Wagagai Limited | | | | | |
| 3. | Packaging and labeling is ideal to meet customer requirements and ensure integrity | | | | | |
| 4. | Equipment and vehicle maintenance is routinely undertaken to avoid mechanical breakdowns in the supply chain | | | | | |
| 5. | Wagagai Limited has efficient information processes to facilitate real-time flow and response to stakeholder needs | | | | | |
| 6. | Order processing is fast to ensure greater responsiveness to customer requirements | | | | | |
| 7. | Wagagai Limited has established quality control systems to ensure quality floral products are delivered to customers | | | | | |
| 8. | Wagagai Limited has a customer service policy to guide staff involved in its supply chain operations | | | | | |
| 9. | Inventory control practices of Wagagai Limited are appropriate for meeting expectations of customers | | | | | |
| 10. | Wagagai Limited operates effective logistics processes to improve the performance of its supply chain | | | | | |

**SECTION C: Supply chain optimization in Wagagai Limited.**

| No. | Item | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1. | Wagagai Limited holds inventories at various locations to buffer distribution operations | | | | | |
| 2. | Wagagai Limited undertakes production planning to satisfy local and export demands | | | | | |
| 3. | Wagagai Limited has consolidated orders of to achieve economies of scale | | | | | |
| 4. | Wagagai Limited maintains a dynamic inventory policy to match the dynamics of the floral product market | | | | | |
| 5. | Wagagai Limited has focused on obtaining demand and supply certainty to optimize inventory holding | | | | | |
| 6. | Maintains quality control systems involving independent inspectors in order to optimize quality of floral products | | | | | |
| 7. | Wagagai Limited has established disease control to disease free propagation and production | | | | | |
| 8. | Wagagai Limited has adopted a flexible marketing system | | | | | |
| 9. | Wagagai Limited has achieved productivity from resources expended in its supply chain | | | | | |
| 10. | Wagagai Limited operates an effective temperature controlled supply chains. | | | | | |

**SECTION D: Marketing practices in Wagagai Limited.**

| No. | Item | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1. | Wagagai Limited has segmented its market for effective marketing and distribution | | | | | |
| 2. | Wagagai Limited has obtained knowledge of customer requirements to be more effective and responsive to customers | | | | | |
| 3. | Wagagai Limited use push and pull strategies in marketing to ensure competitiveness of prices. | | | | | |
| 4. | Wagagai Limited conducts a market research to assess price sensitivity and customer needs. | | | | | |
| 5. | Wagagai Limited operates streamlined routines and practices in marketing and distribution | | | | | |
| 6. | Wagagai Limited has established specialized outlets for their floral products | | | | | |
| 7. | Wagagai Limited has varied its production and distribution processes to meet varied product specifications | | | | | |
| **No.** | **Item** | **1** | **2** | **3** | **4** | **5** |
| 8. | Marketing processes of Wagagai Limited have nurtured a healthy relationship with customers. | | | | | |
| 9. | Wagagai Limited maintains a flexible marketing systems to address | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| | market dynamics | | | | | |
| 10. | Wagagai Limited has kept track of market information system for innovations in the market. | | | | | |

**SECTION E: Performance of Wagagai Limited**

| No. | Item | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| 1. | Wagagai Limited has realised production and operational efficiency | | | | | |
| 2. | Wagagai Limited is responsive to customer requirements | | | | | |
| 3. | Reliable and on-time delivery of floral products have been by Wagagai Limited | | | | | |
| 4. | Wagagai Limited has achieved competitiveness of prices for its floral products | | | | | |
| 5. | Improved quality and integrity of floral products have been achieved by Wagagai Limited | | | | | |
| 6. | Reduction in operational costs has been attained by Wagagai Limited | | | | | |
| 7. | Wagagai Limited meets precise specifications of floral products | | | | | |
| 8. | Low defects of floral products in Wagagai Limited | | | | | |
| 9. | Wagagai Limited has had improved compliance with standards both national ann international. | | | | | |
| 10. | Wagagai Limited has registered improved relationships with stakeholders in its floral supply chains | | | | | |

***Thanks for your participation.***

## Appendix II: Interview Guide

**Dear Sir/Madam,**

I am **Katuura Dedan**, a student of Master of Procurement and Logistics Management at Nkumba University. I am conducting a research on "**Supply Chain Management and performance of floricultural firms: A Case study of Wagagi Limited**" in partial fulfillment of the requirements for the Award of the above Degree. You have been selected to participate and hereby requested respond to the questions in this study. The information got from you will be kept confidential and will be used strictly for academic purposes.

Thank you so much for your cooperation.

1) What is your position at Wagagai Limited?

2) How would you describe supply chain management and performance of Wagagai Limited?

3) How important are logistics processes to achieving performance targets of Wagagai Limited?

4) what is the contribution of supply chain optimization to the performance of Wagagai Limited?

5) What is effect of marketing processes on the performance of Wagagai Limited?

6) What major supply chain optimization aspects are so important to the achievement of desired performance of Wagagagi Limited?

8) How have supply chain management practices generally contributed to the performance of Wagagai?

***Thank you so much for your cooperation***

## Appendix IV: Documentary review checklist

| No. | Document | Review Item | Response | |
|---|---|---|---|---|
| 1. | Supply Chain Performance Reports | • Wagagai keeps record of its performance | *Yes* | *No* |
| | | • If *Yes*, reports on the performance of operations and logistics processes | *Yes* | *No* |
| | | • They indicate cost performance of Wagagai | *Yes* | *No* |
| | | • They indicate performance in the export markets | *Yes* | *No* |
| | | • Quality improvement is reported | *Yes* | *No* |
| | | | | |
| 2. | Sales and Export Reports | • Are available in Wagagai Limited | *Yes* | *No* |
| | | • They indicate local sales | *Yes* | *No* |
| | | • They indicate performance in various markets | *Yes* | *No* |
| | | • Have been used as guides into market research of Wagagai Limited | *Yes* | *No* |
| | | | | |
| 3. | Supply Chain Optimization Guidelines | • Are available in Wagagai Limited | *Yes* | *No* |
| | | • Provide for cost reduction in operations | *Yes* | *No* |
| | | • Cater for quality products and processes | *Yes* | *No* |
| | | | | |

**End**