The Role of Market Agents in Linking Black Commercial Farmers to Fresh Produce Markets in South Africa

by

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DECLARATION

I hereby declare that this thesis which I submit for the M.Sc. degree in Agricultural Economics at the University of Pretoria is my own work and has not been previously submitted for a degree at this or any other institution of higher learning.

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Prof. Andre Louw

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DEDICATION

I dedicate this piece of work to the Almighty God for his grace and the gift of life.

ABSTRACT

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Degree: **MSc. Agric. (Agricultural Economics)**

Department: **Agricultural Economics, Extension and Rural Development**

Study leader: **Professor Andre Louw**

This study is assessing the requirements and necessary conditions that will enable black commercial farmers to access reliable and sustainable markets. It take cognisance of the amount of fresh produce sourced from black commercial farmers by the fresh produce markets in the country. It considers market agents in the fresh produce markets as strategically important to enhancing the growth and success of black commercial farmers. The market agents will enable the black commercial farmers to enter the fresh produce supply chain through the National Fresh Produce Markets in South Africa. In unveiling these possibilities, the study undertakes a situational analysis to determine the enabling and necessary conditions for market agents in the market. It also identifies the characteristics of fresh produce which are necessary to qualify black commercial farmers' fresh produce for marketing at the NFPMs in South Africa. It determines the conditions that market agents will

require from black commercial farmers while maintaining their competitiveness. Methods used include situational analysis, descriptive statistics, ordinal logistic regression model and services supply chain analysis. Primary data was obtained through questionnaires and interviews with market agents and representatives of retail outlets; and secondary information was obtained through desktop review of literature.

The findings of this research show the factors required for the success of a BEE fresh produce supply chain and a market agency in the NFPM. They state that the BEE fresh produce supply chain is equally capable of surviving in the prevailing macro- and micro-economic environment of the country. The results also state that black commercial farmers should ensure acceptable quality and quantity of fresh produce, in addition to meeting the requirements of the BEE market agency. The requirements for market agents included the need for farmers to supply consistent quantity and quality of fresh produce, use appropriate transport, and should be punctual and reliable. Black commercial farmers who supply fresh produce should take cognisance of these requirements for the competitiveness of market agents and adapt their way of doing business accordingly.

The necessary conditions for the BEE fresh produce supply chain ensures an enabling environment in spite of the uncertainties and likelihood of risks, if managed accordingly. To ensure this, the BEE agency needs to manage and coordinate the sourcing and pooling of produce in a pack-house, which is strategically essential for the overall success of the chain. The success of the BEE fresh produce supply chain will mean the success of a BEE agency,

on the condition that unforeseen inhibiting factors beyond the scope of this research are held constant.

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APAC	Agricultural Produce Agents Council
BEE	Black Economic Empowerment
CRM	Customer Relationship Management
CTFPM	Cape Town Fresh Produce Market
DFPM	Durban Fresh Produce Market
GDP	Gross Domestic Product
FPM	Fresh Produce Market
JFPM	Johannesburg Fresh Produce Market
NFPM	National Fresh Produce Market
RSA	Republic of South Africa
SFPM	Springs Fresh Produce Market
SRM	Supplier Relationship Management
TFPM	Tshwane Fresh Produce Market
ZAR	South African Rand

CHAPTER 1: INTRODUCTION

1.1 Context of the Study

Fresh produce (fresh fruits and vegetables) forms the main component for most humans' healthy diet (Wang, Zhou and Feng, 2012). The consumption of fresh fruits and vegetables by the global population explains the size of the market and the demand for fresh produce. This demand for fresh produce established the need for businesses to operate in the marketing channel for this industry. Thus, these businesses have become more concentrated at the middle stage of this marketing channel or supply chain and they have made the supply chain network more complex within the distribution sector. This has resulted in the fresh produce passing through a number of different handlers before reaching final consumers (Euromonitor International, 2010). The large number of businesses at the middle stage has influenced more producers of fresh produce to enter the industry. A greater number of distributors or retail outlets provide consumers with a wider choice of retail outlets supplying fresh produce. This has increased competition among the players and made the business environment more hostile in the middle stage of the supply chain.

The distribution and marketing stage, often referred to as the middle stage of the fresh produce supply chain in South Africa, consists of informal retail outlets, wholesalers, processors, retailers and the National Fresh Produce Markets (NFPM). Wholesalers, processors, retailers (mainly large supermarkets) and the NFPMs form the formal retail outlets. Informal retail outlets, according to the Euromonitor International (2010), are divided into three categories, as listed below:

- Fixed location hawkers – these are hawkers operating from a fixed location, mostly at roadside stands, transport nodes (bus, taxi and train stations) and truck shops;
- Semi-mobile hawkers – these hawkers have a fixed base, but move around within a locality, and also aboard commuter trains;
- Roving hawkers – these are informal traders with no fixed location, but operate with movable displays, such as trolleys, baskets and boxes.

The supply chain involving NFPMs is of interest in this study as it presents a possibility to provide business opportunities and avenues for success in the fresh produce industry for a larger population of South Africa. The business opportunity in this regard is through the establishment of a BEE market agency[1] that reaches out to black commercial farmers (Louw, Jordaan, Chikazunga, & Bienabe, 2007) who are often referred to as small-scale in South Africa (Kirsten & Van Zyl, 1998).

1.2 Background

1.2.1 National Fresh Produce Markets

Fresh produce markets began in South Africa initially as a meeting place between producers/farmers and consumers. The farmers traded with the consumers under the control of a government official (Euromonitor International, 2010; Louw, Ndanga, Chikazunga, 2008). Local markets that served one town or a community were replaced by central markets

[1] BEE Market Agents – this refer to market agents currently in or entering the market that will fully support black commercial farmers by selling their produce and relaying market information necessary for improving and developing the production of their fresh produce.

that served two or more neighbouring towns. NFPMs serving the entire nation were established in 1967 and their function comprises price-formation, distribution and marketing of fresh produce in the country. The role and market shares of NFPMs have been declining ever since the emergence of large chain supermarket and hypermarket retailers, including Wal-Mart, in the fresh produce supply chain (Planet Retail, 2009; Euromonitor International, 2010). The NFPMs currently own about 46 % (DAFF, 2014) of the distribution channel for vegetables, which had decreased from 49.5 % and had been decreasing since the arrival of large chain supermarkets (Louw, et al., 2008). The decrease of market share increased the competition among market agents for the limited customers in the NFPMs.

The top five NFPMs in South Africa, in terms of market share and turnover, are the Johannesburg, Tshwane, Cape Town, Durban and Springs Fresh Produce Markets. These five markets account for about 82 % of the total turnover of all NFPMs (Ramoshaba, 2014). Figure 1.1 below shows the market share of the different NFPM in South Africa. The Johannesburg Fresh Produce Market (JFPM) is the largest, with a 41 % market share and R4 440 million turnover, followed by Tshwane Fresh Produce Market (TFPM) with 19 % market share and R2 038 million turnover. Cape Town Fresh Produce Market (CTFPM) has 10 % market share and R1 053 million turnover; Durban Fresh Produce Market (DFPM) has 9 % market share and R1 011 million turnover; and SFPM has 3 % market share and R349 million turnover (Ramoshaba, 2014). About 6.1 % of the market share is made up of eight much smaller national markets with very small contributions to the overall turnover of the fresh produce market. The NFPMs handles 46 % of the total vegetables produced in the country. The remaining 42 % of fresh produce is distributed through direct sales and consumption, 10 % through processing, and 2 % through export sales (Euromonitor International, 2010). In essence, the gross income trends for fresh produce in South Africa

show an increase of 11.3 % from R40 538 million in 2011/12 to R45 126 million in 2012/13 (DAFF, 2014). This shows the value of fresh produce contribution to the overall economy of the country.

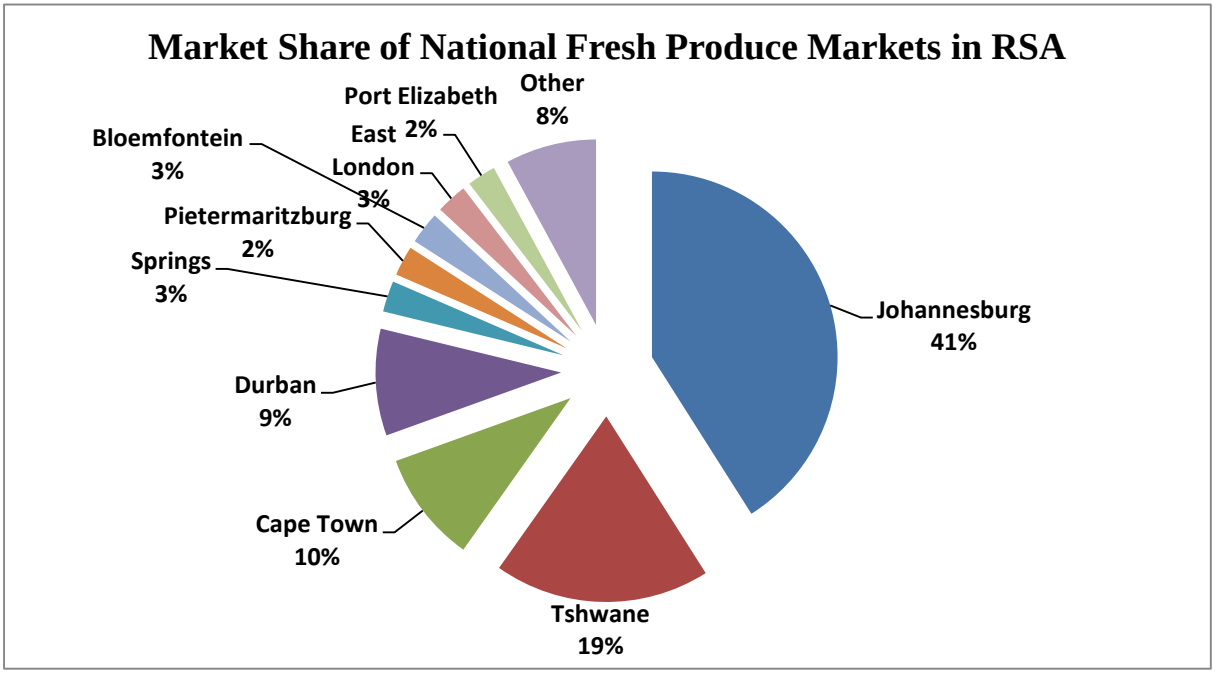

Figure 1.1: Market Share of NFPM

Source: Ramoshaba (2014).

The NFPMs provide a trading platform on which fresh produce is brought in through agents which sell the produce to buyers (Kolisa, 2014). The markets provide the necessary facilities, infrastructure and trading systems to facilitate the selling of fresh produce by agents. Figure 1.2 below illustrates the functions of the fresh produce markets and market agents in a fresh produce supply chain. The market agents are governed by an institutional body called an Agricultural Produce Agents Council (APAC). The function of this association is defined in detail in the following paragraph.

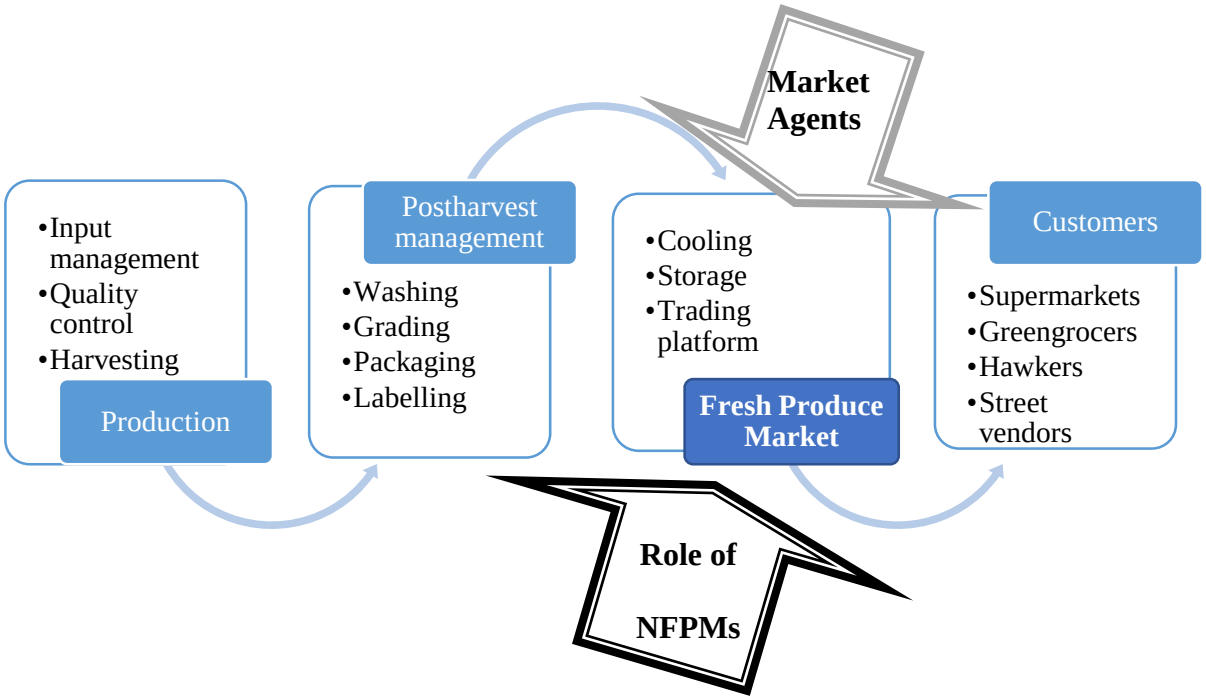

Figure 1.2: The Position and Role of the Fresh Produce Market in the Fresh Produce Supply Chain

Source: Adapted from Kolisa (2014).

1.2.2 Agricultural Produce Agents Council (APAC)

The Agricultural Produce Agents Council (APAC) is a council of market agents in the country that seeks to protect the financial interests of farmers selling the produce through fresh produce markets. It maintains and administers a fidelity fund for all market agents which act as insurance or security for fresh produce farmers (Agricultural Produce Agents Council, 2014). The council of agents was established in 1993 in terms of Act 12 of 1992, which was amended in 2003 (Cordes, 2009). The council stipulates a code of conduct for market agents and ensures that they comply with the Act. It also acts proactively to identify areas of concern so as to initiate remedial or disciplinary action prior to receiving complaints from farmers. Market agents should obtain a registration certificate from APAC in order to

sell through the NFPMs. APAC ensures that an agent is conversant with the Market Agents' Act and that the agent has the appropriate skills and knowledge of the industry before issuing the certificate.

1.2.3 Fresh Produce Agents

An agent, according to the Republic of South Africa (RSA) Government Gazette No 25971 (2004), is defined as follows:

> "*agent: means a person who, for the acquisition of gain on his or her own account or in a partnership, in any manner holds himself or herself out as a person who either directly or indirectly advertises that he or she, on the instructions of or on behalf of any other person, purchases or sells agricultural produce or negotiates in connection therewith or canvasses or undertakes or offers to canvass a purchaser or seller*" (Oosthuizen, 2011).

[Definition of "agent" substituted by section 1(a) of Act 47 of 2003] (Government Gazette No 25971, 2004).

According to APAC (2014), there were about 100 currently-active fresh produce agents registered with Agricultural Produce Agents Council in the year 2014. There were only three fresh produce agents deregistered in the same year. The numbers of agents in the top two produce markets in the country are 16 for Johannesburg FPM and 8 for Tshwane FPM.

Market agents in the NFPMs undertake the distribution link between producers (farmers) and customers (retail outlets) of fresh produce. The fresh produce agents in the country play a

crucial role in the distribution of farmers' produce through the produce markets. They are called commission agents because they sell fresh produce on behalf of the producer or supplier and they are paid for their services rendered according to a negotiable commission, calculated on the gross proceeds of the sale (Agricultural Produce Agents Council, 2010). They have developed the intermediary function between producers and retailers or traders into a more established business enterprise and they remove the burden of marketing from producers and distributors.

Market agents conclude agreements with suppliers of fresh produce and with farmers to sell their produce on their behalf. The fresh produce markets provide the platform on the market floor for market agents to sell the fresh produce to their customers and walk-in buyers. Market agents have more insight as to what fresh produce will sell in the market, therefore farmers need to ensure that their produce is at acceptable quality standards. Competition in the market has driven this condition on the market floor to the extent that market agents have made prior arrangements with suppliers as to how much and how many types of the fresh produce they will take from the farmer (Cordes, 2013). This has in effect tightened production standards, as farmers producing good quality will attract more agents. In essence, it can be noted that market agents put much energy into this type of supply chain, from interacting with farmers, to negotiating and winning more customers. In return for their effort, the market agents receive a commission of 7.5 % of the proceeds of total fresh produce sold in NFPM (Joburg Market, 2009).

The marketing of fresh produce in South Africa has become diversified because of the increased competition in the distributing function, allowing ample market choices for

producers (Louw, et al., 2008). Regardless of this diversity, items of fresh produce anywhere in the world share two important attributes; perishability and seasonality (Cook, 2011). A high level of risk arises from the combination of product perishability and weather variability, which limits distributors in adjusting to short-run equilibrium in demand and supply, irrespective of price, thus making markets volatile (Cook, 2011).

Fresh produce production and distribution in South Africa reflects the dualistic economic system of the country, where a sophisticated, developed economy exists alongside a developing economy (Euromonitor International, 2010). A small number of relatively large, established commercial producers, on the one hand, and a multitude of fragmented, small-scale producers, on the other hand, grow fresh produce. Black commercial farmers have a relatively small market share, when compared with white commercial farmers in the formal fresh produce supply chain.

1.3 Problem Statement

The representation or the number of black commercial farmers supplying fresh produce to the NFPMs of South Africa is still significantly low, notwithstanding the economic transformation policies and legislation after 1994. Black commercial farmers are economically not feasibly able to supply sufficient fresh produce to the NFPMs, owing to a number of institutional barriers (Karan and Kirsten, 2008). These barriers lead to the inability of small-scale farmers to produce competitive and consistent products from a supply and quality point of because of poor production standards, high input costs, and post-harvest losses. These factors are further attributed to a lack of access to cold chains and value adding facilities, such as pack-houses for washing, sorting, grading, packaging and labelling.

Generally, the quality standards for fresh produce required in the FPMs are high. This is the greatest hurdle or entry barrier for the black commercial farmers in supplying their produce to the NFPMs. In this regard, the black commercial farmers will continue to remain small in terms of size, scale and returns on investment unless a mechanisms and policy interventions to link them to more sophisticated markets and integrated supply chains are developed. Karan and Kirsten (2008) and Kirsten, Vermeulen, and Sartorius (2008) have argued that the low engagement levels of black commercial farmers in agribusinesses and integrated business models continue to show the institutional marginalisation in the whole system, and specifically in the fresh produce supply chain.

This research is based on the premise that access to more developed markets for the black commercial farmers is essential for their growth and development. The NFPMs are relatively the best option for the marketing and distribution of black commercial farmers' fresh produce. This is because 46 % of fresh produce is distributed through the NFPMs in the country. Other distributing sectors include the large chain supermarkets (retailers) which own about 43 % of the fresh produce distribution, about 7 % is absorbed by the processing industries, and 4 % is distributed through the export market (DAFF, 2014). This is elaborated in Figure 1.3 below.

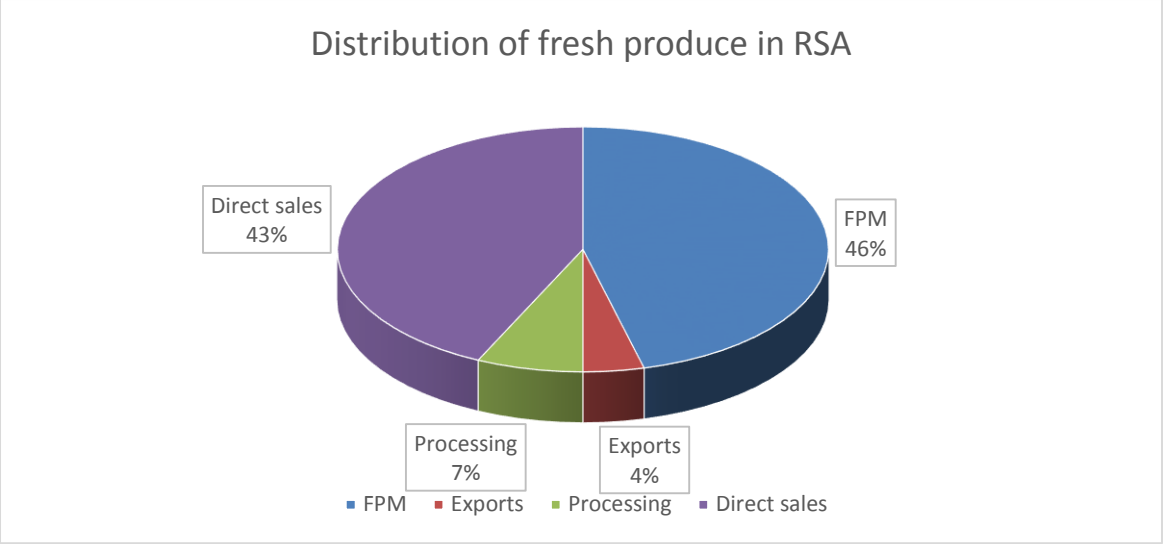

Figure 1.3: **Fresh Produce Distribution Channels in South Africa (2012/13)**

Source: DAFF (2014).

Accordingly, there is a need for a mechanism to link black commercial farmers to markets and an integrated supply chain. Connecting black commercial farmers to the fresh produce markets will require the development of a BEE supply chain which, amongst other measures involves a market agency. The market agency is important in the chain because it undertakes the marketing and distribution function of distributing black commercial farmers' fresh produce to the market. The agency needs to be competitive, profitable and sustainable in the market and have networks of growing black (and white) commercial farmers. Therefore, black commercial farmers are obligated to meet the basic requirements and conditions of the fresh produce market and of market agents and share effectively in the growing demand for fresh produce in South Africa.

1.4 Objectives

The main objective of the research is to describe the elements of a BEE fresh produce supply chain involving market agents in the National Fresh Produce Markets. The research draws particular focus to the function of market agents which will enable the establishment of a successful fresh produce supply chain for black commercial farmers. The market agents play a crucial and strategic role in linking producers and retail outlets. The research will undertake a situational analysis and a risk analysis and will map the characteristics of the fresh produce supply chain necessary to establish a good-fit of the BEE market agency in the supply chain.

The specific objectives of the research are:

i. To identify and define the necessary conditions for an enabling environment to develop a BEE fresh produce supply chain. This refers to undertaking a situational analysis and risk analysis for the BEE fresh produce supply chain.

ii. To identify characteristics of a fresh produce supply chain and the factors qualifying small-scale farmers' fresh produce in the structures of fresh produce markets and retail outlets.

iii. To determine the factors and conditions necessary for the establishment of a competitive market agency in the fresh produce market.

iv. To map the characteristics and services of a market agency for the BEE fresh produce supply chain.

1.5 Hypothesis

The elements essential for the success of market agents in the fresh produce markets are common and/or the same to all distributers or sellers of fresh produce in the FPMs. Market

agents that can support black commercial farmers should meet all the basic requirements and be profitable, competitive and sustainable.

The standards and market requirements of fresh produce are the same in any integrated supply chain as they are controlled by international food safety standards. In this regard, markets will not compromise quality standards at the expense of consumers and the requirements for quality are relatively high. The characteristics of fresh produce in the market should meet the basic requirements of the market and should not hinder the competitiveness of a market agent in market.

1.6 Methods and Procedures

The study employed multiple methods in the analysis and determination of a BEE fresh produce supply chain. The first analysis for the necessary conditions for an enabling environment for the establishment of the supply chain and BEE agency is the situational analysis and risk analysis. The study also employed an empirical research approach to model the determinants of a BEE fresh produce supply chain through fresh produce markets in South Africa. The determinants for the fresh produce supply chain being modelled in the study include the importance of quality, the importance of reliability and consistency in the supply of fresh produce, quantity of fresh produce; washing, sorting, grading, packaging and labelling to help determine the need for a pack-house; and the degree of ripeness and bruises on fresh produce. Other factors to help determine the characteristics and requirements of an agency include the value-proposition, key resources, marketing channels and customer relationship management. The target population sampled for the study comprised fresh

produce market agents and retail outlets, which included greengrocers, hawkers/vendors and supermarkets.

A structured questionnaire with Likert-scale questions was used in obtaining data. A descriptive statistical analysis and an ordinal logistic regression were used to analyse the obtained data. Another method employed was a mapping procedure using case study analysis and services supply chain framework details to map the BEE fresh produce supply chain.

1.7 Study Area

The study was undertaken in the Tshwane Metropolitan area, known as the City of Tshwane. The area targeted was Pretoria Central, which was purposefully selected for the sampling of retail outlets, including both formal and informal markets. Pretoria Central is densely populated and has the largest number of formal and informal retail outlets followed by Soshanguve and Mamelodi (StatsSA, 2013). It is the main city in the metro and is the executive capital town of South Africa.

Figure 1.4: **The map of City of Tshwane in South Africa**

Source: City of Tshwane (2014)

Figure 1.5: **Map of the City of Tshwane**

Source: City of Tshwane (2014)

Note: Figure 1.5 above shows a map of the City of Tshwane, indicating the different segments of the area. The study was undertaken in the central part of the City of Tshwane.

1.8 Organisation of the Study

The study is structured in six chapters, excluding the list of references and appendices. Chapter 1 gives a comprehensive background overview of fresh produce marketing systems through fresh produce markets in the country. It also contains the problem statement, research objectives, hypotheses and a preview of the methods and procedures used for undertaking the research process. Chapter 2 provides a review of literature relevant to fresh produce marketing systems through fresh produce markets. It reviews the literature on international fresh produce marketing systems, global agro-food value chains and their impact on the domestic market. Chapter 3 presents the methodology and analytical framework of the study, consisting of the design, methods of data collection and analysis, as well as how the checklists and questionnaires were developed. Chapter 4 describes the situational analysis and risk analysis of a BEE fresh produce supply chain involving market agents and the fresh produce market. Chapter 5 describes the fresh produce characteristics required in the FPMs and the market agent conditions that could enable the success of a BEE fresh produce supply chain. Chapter 6 maps the characteristics and services of market agents in a supply chain through the fresh produce market. Chapter 7 is the last chapter and it presents the research conclusion and recommendations.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

This section of the study presents a review of relevant literature on marketing systems and the underlying factors of the fresh produce industry, locally and internationally. It reviews the supply chain of fresh produce and cites international examples.

2.2 Fresh Produce Supply Chain

According to Chopra and Meindl (2013), a supply chain consists of all parties involved, directly or indirectly, in fulfilling a customer's request. It involves all the functions required to fulfil a customer's request, starting from production, to distribution, to storing, to retail and final user, and includes customer service (Chopra & Meindl, 2013). The fresh produce supply chain is made of input suppliers, producers, distributors (transporting agents), fresh produce markets or distribution centres, retail outlets (informal and formal traders), processors, and consumers. It is structured into production, distribution and marketing, and consumption stages. The production stage incorporates all the functions of producers (large and small) and input supply. The distribution and marketing stage includes the functions of buying agents in the distribution centres, market agents in the fresh produce markets, and transporting agents. It also includes the function of wholesalers, fresh produce markets, and retail outlets. The fresh produce supply chain also includes a cold chain that maintains a specific temperature of fresh produce throughout the chain until purchase by consumers.

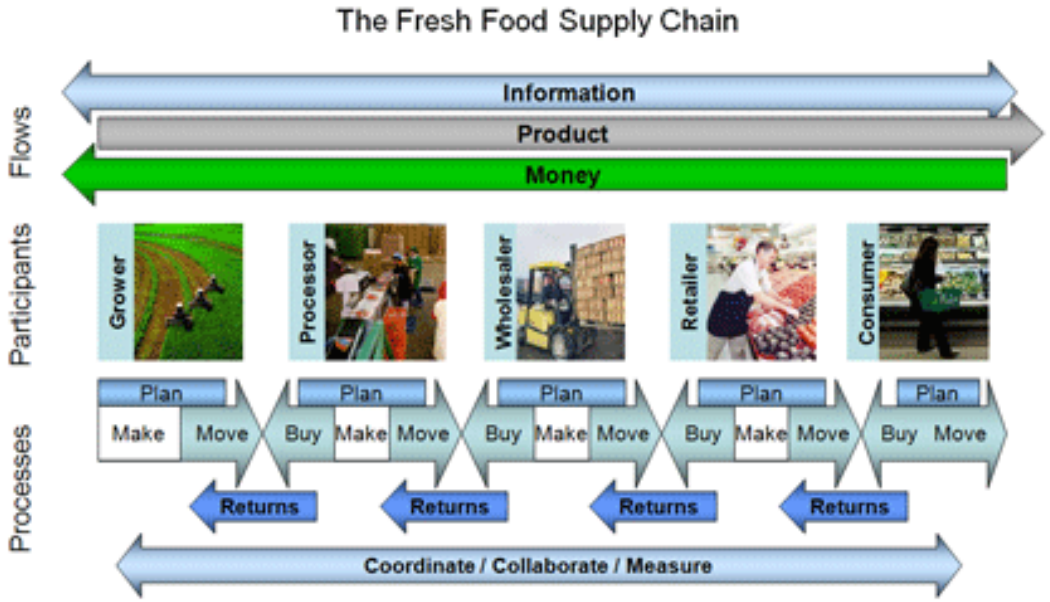

Figure 2.1: **Fresh Produce Supply Chain**

Source: Council of Supply Chain Management Professionals (2011).

Note: Figure 2.1 above shows the flow of fresh produce from the point of production to the point of consumption and a two-way flow of information. This flow of produce and information explains the importance of, and the need for fresh produce agents to undertake the coordination, distribution and marketing function.

Supply chains generally comprise three flows (Jaffee, Siegel & Andrews, 2010), as shown in Figure 2.1 above. These flows include the financial or money flow, physical product flow, and information flow. The flow of fresh produce from producers to consumers requires innovative and constant management. In general, fresh produce supply chains need to be managed properly and require an adequate flow of information and coordination across all players in the chain, in order to coordinate the flow of physical product and the financial flow. This is also explained by Van der Vorst, da Silva & Trienekens (2007), by mentioning the need and importance to manage coordination and continuous innovation between buyers

and sellers in fresh produce supply chain. This is because of the dual pressure (from the buyers' side and producers' side) of the coordination of financial and physical flow exerted on the fresh produce markets by the buyers and sellers of fresh produce (Van der Vorst, et al., 2007). Blackburn and Scudder (2009) confirm that the risks in fresh produce are associated with perishability and deterioration within a short period of time, and this creates enormous uncertainties as to the effectiveness of the supply, as well as the demand of fresh produce. As a result, both buyers and sellers involved in the supply chain could suffer substantial losses. For this reason, the management of the supply chain at the different contact points plays an important role in the marketing of fresh produce (Gereffi, Humphrey & Sturgeon, 2005). The fresh produce should therefore move quickly along the supply chain to avoid massive losses and spoilage (Dimitri, Tenege & Kaufman, 2003). The United States Department of Agriculture – USDA (2012), places strong emphasis on coordination at the successive stages of the supply chain. It further states that the coordination within the supply chain takes into account fresh produce characteristics, such as product quantity, product quality, timing of product flows, and reliability of supply.

The fresh produce supply chain, according to the above literature, is therefore sophisticated and requires appropriate coordination. The supply chain can be either short or long, that is, it can involve few players or many players. It can be limited within a country and it can extend beyond the borders of a country to regional and global markets. In the global markets, the fresh produce supply chain becomes more fragile and sensitive. This is because of the nature and characteristics of fresh produce which is attributable to perishability.

2.3 Fresh Produce Marketing Systems in South Africa

The marketing and distribution of fresh produce in South Africa is carried out through formal channels (consisting of a relatively small number of large traders) and informal channels (consisting of a relatively large number of small traders). The formal distribution channel is the most dominant in the marketing and distribution of fresh produce in the country and is comprised of the fresh produce markets and large chain supermarkets. The informal distribution and marketing system refers to the retailing carried out on the streets, in spot markets by hawkers and through convenience shops (spaza shops[2]) in the townships (Louw & Geyser, 2009).

2.3.1 Fresh Produce Markets

The FPMs in South African were established to cater for the distribution and marketing of fresh produce of large-scale and small-scale commercial farmers. Small-scale farmers are unable to make use of the FPM marketing channel because they lack capacity to meet market requirements (Louw, Jordaan, Murwisi & Simelane, 2013). They are also faced with a number of institutional barriers (Karan and Kirsten, 2008) including lack of transport, storage facilities, market infrastructure, market information and extension services; poor road conditions, discrimination and long distances from processing facilities; limited access to telecommunication, training, education, electricity and finance services; and a lack of capacity in representative organisations.

[2] Spaza shop – refers to an informal convenience shop business in South Africa, usually run from home

There are 17 registered FPMs in South Africa, namely Johannesburg, Tshwane, Cape Town, Durban, Springs, Pietermaritzburg, Klerksdorp, Bloemfontein, Port Elizabeth, East London, Welkom, Vereeniging, Nelspruit, Kimberly, Witbank, Mthatha, and George Fresh Produce Market (Louw, et al., 2013). The main products sold at these markets include potatoes, onions, tomatoes, carrots, green peas, cabbage, beetroot, green beans, cauliflower, pumpkins, green maize, and sweet potatoes. Fresh fruit sold includes deciduous, citrus and subtropical fruit, as well as berries, cherries, strawberries, figs, prunes, quinces and melons.

2.3.2 Wholesalers

South African fresh produce wholesalers include FPMs, fresh fruits and vegetable wholesalers, distribution centres for retail chain supermarkets, and direct farmer sales. FPMs constitute the largest wholesalers and thus the biggest actors in the supply chain for fresh fruits and vegetables. Other wholesalers in the fresh produce supply chain include non-syndicated fresh fruits and vegetables wholesalers, distribution centres for retail chain supermarkets and farm gate sales (Louw, et al., 2013; NAMC, 2000). The smaller wholesalers primarily target the local retailers and informal retailers, such as hawkers and greengrocers. The distribution centres and/or corporate wholesalers have been established exclusively to supply retail chains, such as Freshmark of the Shoprite Checkers group, Spar, Pick ‘n Pay supermarkets and hypermarkets, as well as Massmart/Walmart, including Fruits and Veg. City, and Makro (Planet Retail, 2009).

2.3.4 Supermarkets

Supermarkets play a major role in the fresh produce supply chain as they represent the main channel through which many households access their food, including fresh produce. With the changing market system, supermarkets are becoming more dominant in the supply chain for fresh produce through vertical coordination and integration, thereby commanding more control over supply chain activities. Supermarkets represent a highly concentrated retail market where 2 % of supermarkets are responsible for between 50 % and 60 % of all food sales in South Africa (Weatherson & Reardon, 2003). The main formal supermarket chains include the listed companies Pick ‘n Pay, Shoprite-Checkers, Woolworths, and the Spar group. Supermarkets mainly operate through centralised procurement systems where distribution centres perform the assembly function of buying fresh fruits and vegetables (FFV) from various sources, including directly from farmers, and then supply to the various outlets (Madevu, 2006).

2.3.5 Greengrocers

Greengrocers, also known as fruiters, are classified under the larger population of smaller stores in the formal retail industry. According to the Economist Intelligence Unit (2004), these small-format stores collectively control 30 % of retail turnover in South Africa. This format of store is quite versatile owing to its ability to co-exist with both hawkers and supermarkets in fresh fruit and vegetable retail (Madevu, Louw & Ndanga, 2009). Greengrocers, however, are motivated by quality standards and will procure their fresh produce from either a farm or a FPM, based on which one is closer to their business, or has the better quality standards, or with whom they have a better relationship (Louw, et al., 2008).

2.3.6 Satellite Markets

Satellite markets are markets that help in bringing produce closer to the customer and thus provide convenience and better customer satisfaction. The intention for satellite markets was to bring fresh produce closer to the informal traders in order to reduce transport costs and to minimize losses associated with transportation. By developing these smaller markets in key surrounding areas of the NFPMs, satellite markets allow the average informal traders to improve their profit margins as transportation costs decrease significantly.

2.3.7 Informal Traders (Hawkers)

Hawkers constitute the majority of participants in the informal trade fresh produce market in South Africa. FPMs play a significant role in the informal channels. Madevu, et al. (2009) identified rural-based hawkers as the most important channel for smallholder producers, with processing plants, local stores and local communities as the second important channel, while the third includes satellite N2 markets[3]. However, owing to geographical their location, hawkers prefer to acquire their fresh produce from FPMs, rather than directly from the producers, as the markets are generally located closer to the locations where they plan to sell their acquisitions, which thus confer a much greater convenience factor and increased profits because of the lowering of transportation costs. The same applies for street vendors who also seek to maximise their profits through cutting transportation costs by accessing fresh produce from FPMs, rather than procuring directly from the farmers. Informal retailers are classified into fixed location hawkers, semi-mobile hawkers, and roving hawkers. Fixed-location hawkers are generally involved in certain partnerships and family alliances and are

[3] N2 markets – refers to the farm stalls/farmer's markets along the N2 highway in South Africa.

permanently located at roadside stands and transport nodes, such as bus, taxi and train stations.

The second class of informal retailers comprise those who are semi-mobile and are involved in partnerships and family alliances with a fixed or movable base, including those doing business at traffic robots and aboard commuter trains. The third class constitutes roving hawkers, who are an informal group which involves partnerships and family alliances using movable displays (Louw, Kirsten, Jordaan, & Ndanga, 2008).

2.4 International Marketing Systems and Fresh Produce Characteristics

The review of literature examined international marketing systems regarding fresh produce marketing in other countries in Africa and rest of the world. A random selection of countries was reviewed to provide a view of fresh produce marketing outside South Africa. In Africa, Kenya in eastern Africa and Ghana in western Africa were selected. Overseas countries include Brazil and India.

2.4.1 Fresh Produce Marketing in Africa

According to the Euromonitor International (2010), in Kenya fresh produce is sold through local markets and international markets. The international markets for the country include France, the Netherlands, Spain, and the United Kingdom, and the major products include French beans, Asian vegetables, avocados, passion fruit, and mangos (Gereffi, et al., 2011). The marketing system for fresh produce is dominated by the private sector that has benefited from structural, macro-economic reforms and transport hubs. The fresh produce industry has

changed over the past decades and has become a highly sophisticated supplier of pre-packaged, unprocessed fruit and vegetables. The sector focuses on high value, lightweight fruit and vegetables that cost less to transport, thus exports are dominated by air freighted products (Gereffi, et al., 2011). About 75 % of fresh produce in Kenya is marketed through supermarkets to export markets, local wholesale and food outlets. The marketing system for fresh produce in the country had been controlled by small-scale farmers in the 1990s, controlling about three-quarters of the fresh produce production. The involvement of small-scale farmers in the marketing of fresh produce has since dropped by more than 50 % because of their inability to comply with international quality standards requirements, as stated in Table 2.1 below.

Table 2.1: Prominent Standards of the Fresh Produce Industry

	Public		Private	
	Mandatory	**Voluntary**	**Individual**	**Collective**
National	•National legislation (pesticide use, labor regulations, sanitary inspections etc) •U.S. Department of Agriculture (USDA) standards	•Hazard Analysis Critical Control Point (HACCP) •USDA National organic program	•Nature's Choice (Tesco) •Field-to-Fork (M&S) •Terre et Saveur (Casino) •Conad Percorso Qualità (Italy) •Albert Heijn BV: AH Excellent (Netherlands)	•British Retail Consortium (UK) •Assured Foods Standards (UK)
Regional	• EU Regulations		•Filieres Qualite (Carrefour)	•EurepGap[11] •Dutch HACCP •Qualitat Sicherhiet (QS – Belgium, Holland, Austria) •International Food Standard (German, French, Italian)
International	•World Trade Organization SPS Agreement	•ISO 9000 •ISO 22000	•SQF 1000/2000/3000 (U.S.)	•GlobalGap •Global Food Safety Initiative •SA 8000 •International Federation of Organic Agriculture Movements (IFOAM) Standard

Source: Gereffi, Bamber & Fernandez-Stark (2011)

International markets for fresh produce, especially the European markets, are very demanding and require very competitive premium quality, which has resulted in the decline of supply from small-scale producers. New entrants, mainly smallholder or small-scale producers with no certification to satisfy public and private standards, have difficulty in entering international marketing channels. The only most viable channel for smallholder farmers, though the number is declining as a result of production standards and costs of complying with private or public standards, is the option of contracting with supermarkets and fresh produce markets (Euromonitor International, 2010).

The export market of fresh produce in Kenya highlights the importance in the compliance in stipulated quality standards. It is mentioned that a significant number of farmers supplying the European market with fresh produce were declined as a result of being unable to comply with fresh produce quality standards. This element of compliance to quality standards is more pronounced in the South African fresh produce industry. The quality standards of fresh produce in South Africa are in line with the international standards.

2.4.2 Agro Food Marketing Systems in India

The marketing systems in India constitute traditional value chains that are gradually changing as the result of the large supermarkets penetrating the markets in larger cities, suburbs, and semi-urban areas (Reardon, Barret, Berdegue & Swinnen, 2004). The marketing of domestic and imported fresh produce in India involves many intermediaries, such as export agents and the clearing and forwarding agents (CFAs) that transport the produce from the producers (farmers) to suppliers or distributors. These agents do not own the products, but receive a certain percentage of the margin, i.e. 2 % – 2.5 %, and they also receive payment on behalf of

the producer from the suppliers or the distributors (Italian Trade Commission, 2012). According to the Italian Trade Commission (2012), the suppliers have specific geographical territories and a sales agent that supplies wholesalers and large retailers in urban areas. The sales agents provide credit to their customers and receive margins in the range of 3 % – 9 % (Italian Trade Commission, 2012). The wholesalers provide the final link to the rural and smaller retailers who cannot purchase directly from the suppliers or distributors. This highlights the importance of the middleman function, which cannot be eliminated in the marketing of fresh produce.

In South African fresh produce marketing, the concept of commission received by market agents for the sale of fresh produce on behalf of the farmers, is applicable. Market agents in South Africa receive about 5% commission on the total sale of fresh produce through the NFPMs. The importance of the role of fresh produce market agents is shown in the section below on fresh produce marketing in Brazil.

2.4.3 Agro-food Marketing Systems in Brazil

Fresh produce in Brazil is procured by wholesalers (CEAGESP[4] – Fresh produce market, and CEASAs[5]), terminal markets (SINAC[6] – COBAL[7]), municipal markets and retailers. The

[4] CEAGESP is a state company for the Federal Government of Sao Paulo dealing with fresh produce terminal markets and grain warehouses.

[5] CEASA *(Central de Abastecimento e Servicos Auxiliares)*– a government-run wholesaler.

[6] SINAC – National System of Central Supply in charge of Group Executive System Modernisation Supply (Gemab) created by the Federal Government in 1969.

fresh produce market – central hub (CEAGESP) obtains fresh produce from farmers through agents. The fresh produce market is a wholesaler linking produce from the farmer to retailers. The retail industry supplied by this fresh produce market supply comprises hawkers, individual buyers, government institutions, schools and universities, restaurants, greengrocers, and supermarkets (de Souza Dias Gutierrez, 2012).

2.4.4 Impact of International Agro Food Marketing System on Domestic Markets

According to the International Institute for Environment and Development (IIED) (2008), small-scale farmers, mainly in developing countries, are encouraged to deal with the withdrawal of governments from the business of agricultural support and commodity trading by exploiting their comparative advantage and forging direct relations with the market. The increased risk of exposure to market fluctuations and removal of safety nets would be countered by improved market information and reduced information asymmetries, efficient scales of production and marketing, contract farming, and improved liquidity (International Institute for Environment and Development, 2008).

The study by the IIED (2008) further highlighted the world markets distortions caused by dumping, especially from the EU and US, of exports at prices below the cost of production. Liberalisation of trade means that international markets set the price and quality standards in domestic markets. Agriculture, which is oriented towards both the export sector and internal markets, must then turn out products at a similar cost and quality to those that can be bought

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[7] COBAL – State *Companhia Brasileira de Alimentos* – a state company responsible for coordination functions, technical control, administrative and financial programme.

on the world market. Access to new market opportunities in an open economy is thus predicated on an end to distortions caused by dumping (IIED, 2008).

Globalization and expanding international markets as well as the fast-growing middle and high income classes in many developing countries offer opportunities for developing country producers to operate in emerging national and international markets. This means that producers must gain better control over production, trade and distribution in order to guarantee the quality and value added of their products and to operate in a cost-effective way. Moreover, these producers must adapt to stringent quality and safety standards and regulations in these markets (Dolan & Humphrey, 2004). Important barriers for developing country producers in this respect are the lack of an enabling environment offering institutional and infrastructural support, availability of resources and efficient and effective coordination in value chains. According to Trienekens, (2011) small-scale producers are at a disadvantage because they have relatively small capital to invest, use traditional techniques, depend on family labour and have no contact with international market players.

2.5 Conclusion

Overarching attributes of fresh produce supply chains throughout the globe include the nature of the fresh produce (perishability), coordination and collaboration which enable the flows (information, financial and physical products) in the entire chain. The nature of fresh produce tends to introduce competition and hostility into the marketing and distribution function. This segregates the fresh produce supply chains such that integrated supply chains are more successful than less-integrated supply chains. Fresh produce supply chains that cannot afford to maintain cold chains tend to be short-lived. Local and international fresh produce markets

require and demand competitive premium quality of products, which is a significantly high barrier for less-developed fresh produce supply chains.

CHAPTER 3: METHODOLOGY AND ANALYTICAL FRAMEWORK

3.1 Introduction

This section presents the methodological approach and analytical framework employed in the study. The study models the determinants of a supply chain for BEE fresh produce market agents in an effort to establish the most important factors critical to the success of the chain, and thus the BEE market agency.

3.2 Research Design and Methodology

The study undertook a survey of fresh produce market agents and retail outlets to identify and describe the elements of a BEE fresh produce supply chain. It drew attention to the physical characteristics of fresh produce market agents enabling the development of an agency. The methodological approach and analysis for the execution of the research objectives is as outlined below:

i. A situational analysis was used for the identification of the necessary conditions for an enabling environment of a BEE fresh produce supply chain. The situational analysis method describes the internal and external macro-economic environmental forces of the fresh produce supply chain. This analysis comprised PESTEL and SWOT analysis, and a competitor analysis and risks analysis was used to strengthen the identification of the necessary condition.

ii. A descriptive statistical analysis was used for the identification of fresh produce supply chain characteristics qualifying small-scale farmers' fresh produce in the structures of fresh produce markets and retail outlets.

iii. An ordinal logistic regression analysis was used to determine the factors and conditions necessary for the establishment of a competitive market agency in the fresh produce market.

iv. In mapping the characteristics and services of a market agency for the BEE fresh produce supply chain, this study adopted a service supply chain framework from Sakhuja and Jain (2012).

The sample design and selection for data collection in this study is defined in the section below.

3.2.1 Selection of Sample and Design

The study undertook a survey of fresh produce market agents and retail outlets. A multistage sampling procedure was employed for this study. The sampled groups included market agents and retail outlets that comprised supermarkets, greengrocers, and hawkers. The sampling was divided into two strata, i.e. stratum 1 for market agents and stratum 2 for retail outlets.

3.2.1.1 Stratum 1: Fresh Produce Market Agents

Cochran's sample size formula adapted from Bartlett, Kotrlik, and Higgins (2001) was used to determine the number of market agents to be sampled in the study. The sample drawn was a true representation of the total number of market agents at 95 % level of significance. There are about 100 market agents in the NFPMs, according to APAC (2012). About 80 of these market agents were selected randomly, including eight Tshwane fresh produce market agents purposively selected for sampling using the formula illustrated below.

$$n_0 = \frac{t^2(p)(q)}{d^2},\ n_1 = \frac{n_0}{1+\frac{n_0}{N}},$$

- n_0 = required return sample size, according to Cochran's formula
- n_1 = required return sample size because the sample is greater than 5 per cent of the population
- t = value for selected alpha level of 0.025 in each tail = 1.96 (95 % confidence interval) which indicates the level of risk the researcher is willing to take that the true margin of error may exceed the acceptable margin of error
- (p) (q) = is the estimate of variance in which 0.5 is the maximum possible proportion and (1- 0.5) is the maximum possible sample size
- d = acceptable margin of error for proportion being estimated = 0 .05 (error researcher is willing to accept)
- N = total number of market agents = 100.

3.2.1.2 Stratum 2: Retail Outlets

The retail outlets targeted included supermarkets, greengrocers and hawkers. The sample selection procedure at this stratum used a ratio of 1:2:5, adopted from Madevu, et al., (2009). However, determining the appropriate population size of hawkers was impossible, as the greater number were not registered (Madevu, 2006), hence the use of the ratio above to help determine the other units when at least one population size is known. The ratio was used in the format, supermarket: greengrocers: hawkers. Five main supermarkets were selected (Makro, Pick 'n Pay, Shoprite, Spar, and Woolworths). The ratio informed by the five supermarkets will give-out 10 greengrocers, and 25 hawkers.

A random sampling procedure was used to select the 40 retail outlets from the study area. This was a random sampling of 5 main supermarkets, 10 greengrocers, and 25 hawkers. A list of supermarkets and greengrocers falling within the study area was obtained from Stat SA, business directories, and Mbendi online directories and used to select the sample units. Sampling hawkers was different as there was no formal list, thus selecting sampling units in this category was done by randomly picking 3 out of 5 hawkers found at busy sites or near retail outlets.

3.3 Methods of Data Collection

The methods of data collection used were interviews and Likert-type scale structured questionnaires. In stratum 1, the research involved interviewing market agents in the TFPM and submitting electronic questionnaires using an online survey computer software "survey monkey" to other sampled market agents within the country. Follow-up calls were made to selected market agents to request completion of the questionnaire. In stratum 2, structured questionnaires were administered face-to-face to fresh produce procurement managers in the sampled retail outlets.

The study also randomly sampled one market agent to interview for the case study analysis to help inform the description of the characteristics of a successful market agent, and hence the fresh produce supply chain through market agents.

3.4 Questionnaire

Structured and Likert-type rating scale questionnaires with open-ended questions were used to collect primary data across all strata sampled for the study. Specific questionnaires were prepared for fresh produce market agents and retail outlets (formal and informal), and one for the market agent sampled for case study analysis.

A Business Model Generation Guide by Osterwalder and Pigneur (2011) informed the questionnaire design for fresh produce market agents. The development of the questionnaire also used checklists from empirical researches on determinants for fresh produce supplier selection (Verma & Pullman, 1998), determinants of agile fresh produce supply chain (Karuranga, Frayret, D'Amours, 2008), and fresh produce marketing systems (Tschirley, Hichaambwa, Ayieko, Cairns & Kelly, 2012).

The development of the retail outlets questionnaire was informed by information obtained from pre-interviews with fresh produce shop managers at Pick 'n Pay and Spar Supermarkets at Hatfield, Pretoria.

3.5 Methods of Data Analysis

The type of data obtained for the study comprised both qualitative and quantitative data. Methods employed for the analysis of this type of data include descriptive statistical analysis, and an ordinal logistic regression analysis. Both the methods were undertaken using a computer statistical package – SPSS (Statistical Package for Social Sciences).

3.5.1 Descriptive Statistics Analysis

A descriptive statistics analysis was used to analyse qualitative and quantitative data in the study by running frequency tables and graphs in SPSS. In general, this analysis was used to produce a summary of responses and outcomes from the data obtained in interviews and questionnaires.

3.5.2 Ordinal Logistic Regression Analysis

The study employed an ordinal logistic regression analysis which is generally used to statistically estimate an ordinal dependant variable, given one or more explanatory variables (Lund & Lund, 2013). The analysis using ordinal logistic regression defines the probabilities of all events differently. It models the relationship or interactions and influence of exploratory variables to predict the dependent variable (Lund & Lund, 2013). In this study, the model was used to predict the dependent variable on a 1 – 5 point Likert-scale (strongly disagree to strongly agree) with 5 independent variables. The analysis was run using the Polytomous Universal Model (PLUM) in SPSS and the following assumptions were made according to the requirement for undertaking the ordinal regression analysis. These assumptions were adapted from the Laerd Statistics (Lund & Lund, 2013):

- **"Assumption 1**: The dependent variable should be measured at the ordinal level (Likert-scale),
- **Assumption 2**: One or more independent variables are continuous, ordinal or categorical (including dichotomous variables),
- **Assumption 3**: There is no multicollinearity,

- **Assumption 4**: There is proportional odds (cumulative odds ordinal logistic regression with proportional odds), i.e. each independent variable has similar effect at each cumulative split of the ordinal dependent variable."

3.6 Conclusion

Chapter 6 has presented the methods and procedures employed to address the research question and objectives. The next Chapters, 4, 5 and 6, describe in detail the outcomes of the analysis and methods used.

CHAPTER 4: SITUATIONAL AND RISK ANALYSIS FOR THE BEE FRESH PRODUCE SUPPLY CHAIN

4.1 Introduction

This chapter presents the analysis of the macro-economic environment and the analysis of risks within the BEE fresh produce supply chain. The analysis specifically looks at the external and internal macro-economic environment for a fresh produce market agency supporting and promoting black commercial farmers through the FPM. The focus is on fresh produce market agents in this analysis because of the strategic and pivotal role they play in the distribution of fresh produce through the FPM.

4.2 Situational Analysis

The situational analysis employs the PESTEL and SWOT analysis from a broader perspective to analyse the macro-economic environment for the BEE fresh produce supply in the NFPMs The analysis presents the assessment of the internal and external macro-economic environmental forces influencing the successful and competitive operation of market agents in the FPM. Market agents from the Tshwane Fresh Produce Market were sampled for this analysis. The outcomes from the analysis were adapted to establish the elements essential for the success of a BEE fresh produce supply chain.

4.2.1 PESTEL Analysis

The PESTEL analysis comprises six segments, as shown in Figure 4.1 below. These segments are Political environment, Economic environment, Social or Socio-Cultural environment, Technological environment, Ecological environment, and Legal environment.

These segments normally have both negative and positive impacts on the competitiveness and operation of a business. The effects of these external environmental influences are uncontrollable at the business or industry level, but need to be factored into management decisions.

Figure 4.1: PESTEL

Source: Adapted from Chartered Institute of Personnel and Development (2014).

The PESTEL factors were tested with the market agents from the Tshwane market. The market agents were asked to rate each factor according to how it impacts on or influences their agencies. The rating was done to determine the level of importance of the PESTEL factors. The rating scale was between 1 (least important) and 5 (most important).

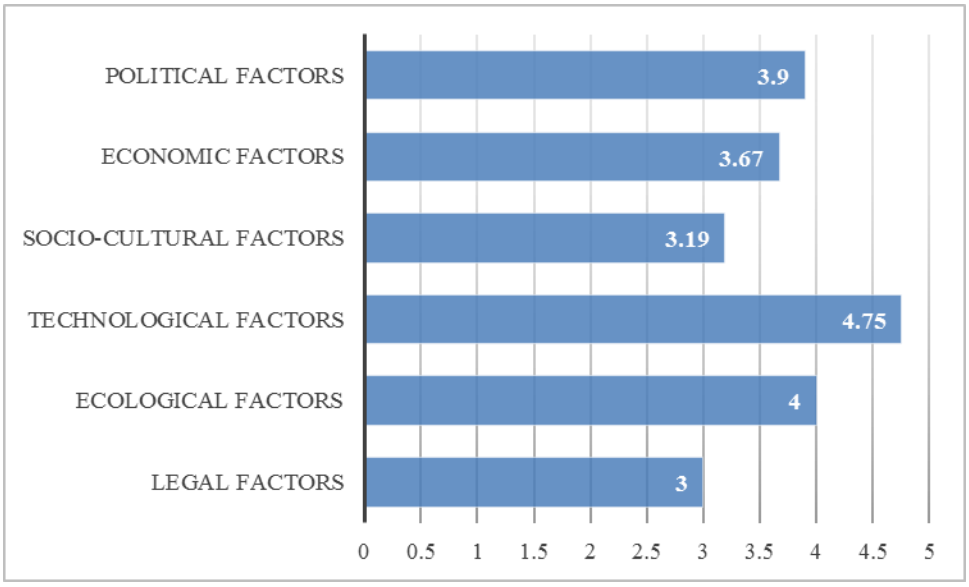


Figure 4.2: **PESTEL Analysis**

Source: Author

Figure 4.2 above shows the average ratings for each component of the PESTEL analysis. The analysis on the figure above shows that the rating, on average, of the political factors having an impact on market agency to be 3.9, meaning that the impact on the agency is above average. This was according to the Likert-scale rating of 1 (least important), 2 (below average), 3 (average), 4 (above average), and 5 (most important). The level of importance of how the economic factors impact on the market agents is above average. Technological factors are rated very important to the agency business. The components of the PESTEL are further broken down below into critical factors having an influence or impact on market agency operations.

4.2.1.1 Political environment

The political environment reflects how organisations influence government and how government influences them through legislation and policies. Government decisions and activity influences the political environment. This is because the government is a major regulator, deregulator, subsidiser, employer and customer in every industry or organisation in a country (Ehlers & Lazenby, 2010). In the case of fresh produce agents and fresh produce markets, the government has enacted regulations guiding their operations. These regulations include the Regulation Act 12 of 1992, the new Companies Act, and the Agricultural Produce Standard Act to enhance the process of economic transformation; the government has also set up an AgriBEE Charter to empower the black community that was disadvantaged by previous government regulations[8]. This is essential in this industry as it affects a larger section of fresh produce farmers.

Within this environment, there are other bodies that emphasise the effectiveness and efficiency of delivery in respect of government regulations. This includes the Agricultural Produce Agents Council, which is responsible of issuing certificates that enable agents to operate in the market. This certificate is issued in accordance with meeting the requirements of the council.

[8] AgriBEE Reference Group, 2004. Broad-Based Black Economic Empowerment in Agriculture; AgriBEE Reference Document. AgriBEE Framework 26 July 2004. www.tammac.co.za/agribee/AgriBEERefernce

Kloppers, E.M. & Fourie, L.M., 2014. Defining corporate social responsibility in the South African agricultural sector. African Journal of Agricultural Research 9(46) pp. 3418-3426

The political status of the country is stable and the policies and laws support a conducive business environment. These laws include the competition law, company, financial and intellectually property laws, some of which are traced from Roman-Dutch and English laws. The country's basic policy on law and policy implementation is carried out according to proper legal procedures (Organisation for Economic Cooperation and Development, 2003). The competition law is as stated in the Competition Act 89 of 1998. It basically promotes the efficiency, adaptability and development of the economy. It ensures that small- and medium-sized enterprises have equitable opportunity to participate in the economy (Competition Commission, 2014).

The political factors described in the above paragraphs were rated to identify their levels of importance to the market agents in the Tshwane Fresh Produce Market. Figure 4.3 below shows that the level of importance of the financial laws, APAC, the AgriBEE Charter, the Agricultural Standard Act, the amended Act, and the new Companies Act is above average. The Agricultural Produce Act and the regulations of the fresh produce market were found to be very important, with a score rating of 5. Intellectual property rights seem not to have a significant impact on the agency, as the average rating shows this to be below average.

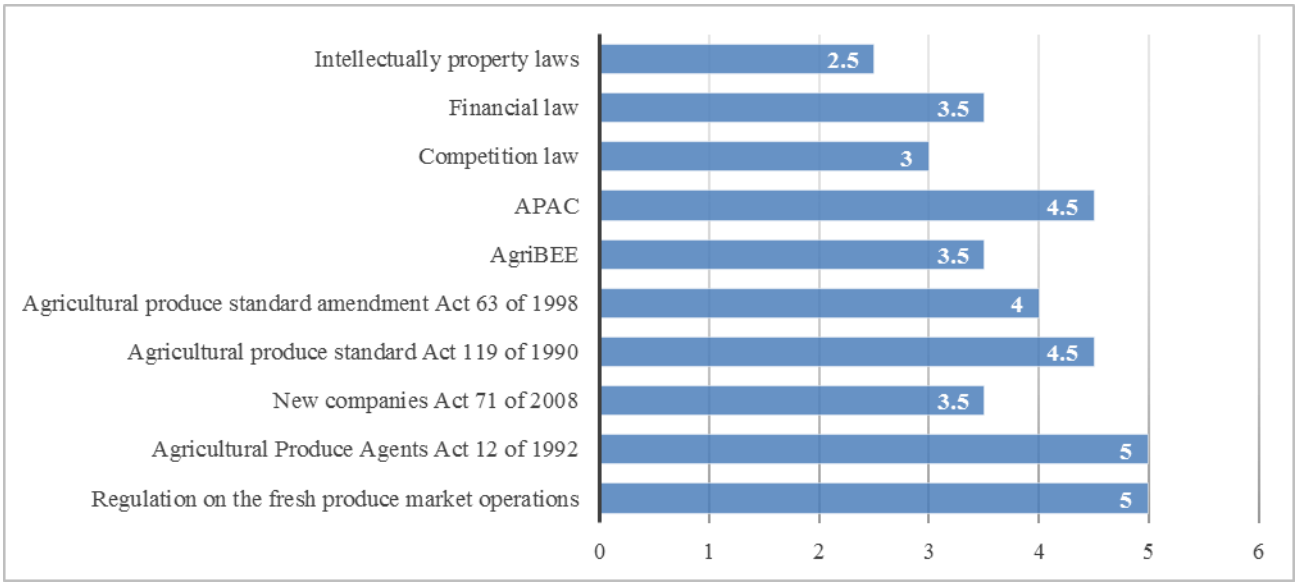


Figure 4.3: **Political Factors**

Source: Author

Note: The figure above shows the average ratings of the level importance of Political factors to market agents in the Tshwane market.

4.2.1.2 Economic environment

The economic environment refers to the changes and trends affecting the nature and direction of the economy in which organisations and industries operate (Ehlers & Lazenby, 2010). The economy of the country has shown to be growing, though at a slow rate according to the domestic economy outlook for South Africa (National Treasury, 2013). The growth rate for 2013 grew from 0.9 % in the first quarter, to 3 % in the second quarter, 0.7 % in the third quarter, and to 3.8 % in the last quarter (Trading Economics, 2014). The forecast economic growth for the first quarter and second quarter of 2014, according to Trading Economics (2014), was 1.7 % and 2.6 %, respectively. Food consumption by households accounted for about 60 % of GDP (National Treasury, 2013), and it contributed about 15.4 % to the

Consumer Price Index (Trading Economics, 2014). Real disposable income was R2 112 178 million, and consumer spending was R1 335 512 million, for the year ended December 31, 2013 (Trading Economics, 2014). The growth of disposable income is affected by poor job creation and/or lack of jobs. Interest rates, on the other hand, affect debt repayment and credit for domestic economies.

Figure 4.4: **South Africa GDP growth rate (2009 – 2013)**

Source: Trading Economics (2014).

Note: Figure 4.4 above shows the trend of the GDP growth rate of South Africa from end of year 2008 to the end of year 2013.

Other economic indicators impacting on the economic environment for businesses in the country are shown in Table 4.1 below. Figure 4.4 above show the trends in the growth rate of GDP in the country from 2009 to 2013. The average growth rate of GDP since 1993 is 3.19 %

(Trading Economics, 2014), which is an indication of economic growth in the country. The trends in the inflation rate in the country are shown in Figure 4.5 below.

Table 4.1: **Economic Indicators for South Africa as at 31 December 2013**

GDP growth rate	3.8 %
Unemployment rate	24.1 %
Labour cost (index point)	351.9
Total population	52.98 million
Inflation rate	6 %
Consumer price index (CPI)	108.7
Interest rate	5.5 %
Consumer confidence index	-6
Consumer spending	R1 335 512 million
Disposable personal income	R2 112 178 million
Corporate tax rate	28 %

Source: Adapted from Trading Economics (2014)

Note: The table shows selected economic indicators for South Africa, calculated as at the end of year 2013.

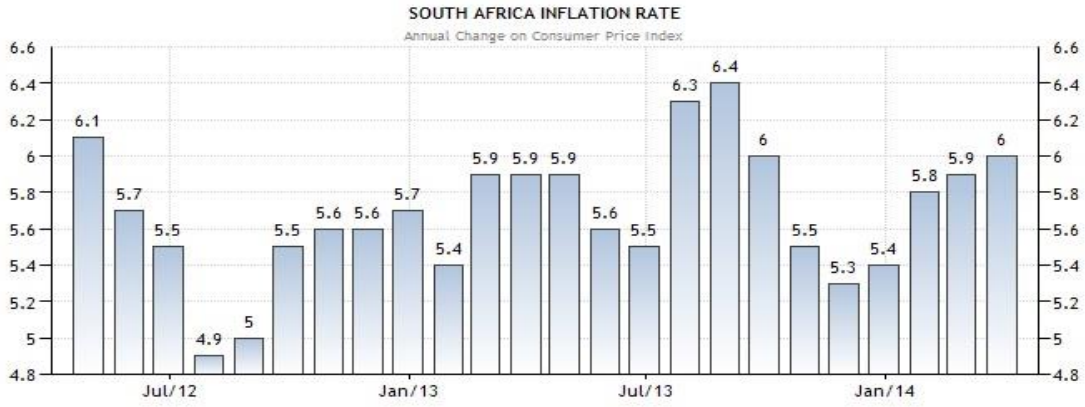


Figure 4.5: **South Africa Inflation Rate (2012 – 2014)**

Source: Trading Economics (2014)

An analysis of these economic indicators shows that the chances of establishing a profitable and successful business in South Africa are significantly high. The fresh produce agency business also stands fair chances of being successful in this economic environment. These factors of the economic environment in the country were rated by market agents in the Tshwane market as shown in Figure 4.6 below. The conclusion drawn from this analysis shows that consumer spending has the most important impact on the agency business. Inflation rate, real disposable income and household consumption have equal levels of importance, on average, for the market agents business. The level of importance is above average, with a rating of 4.

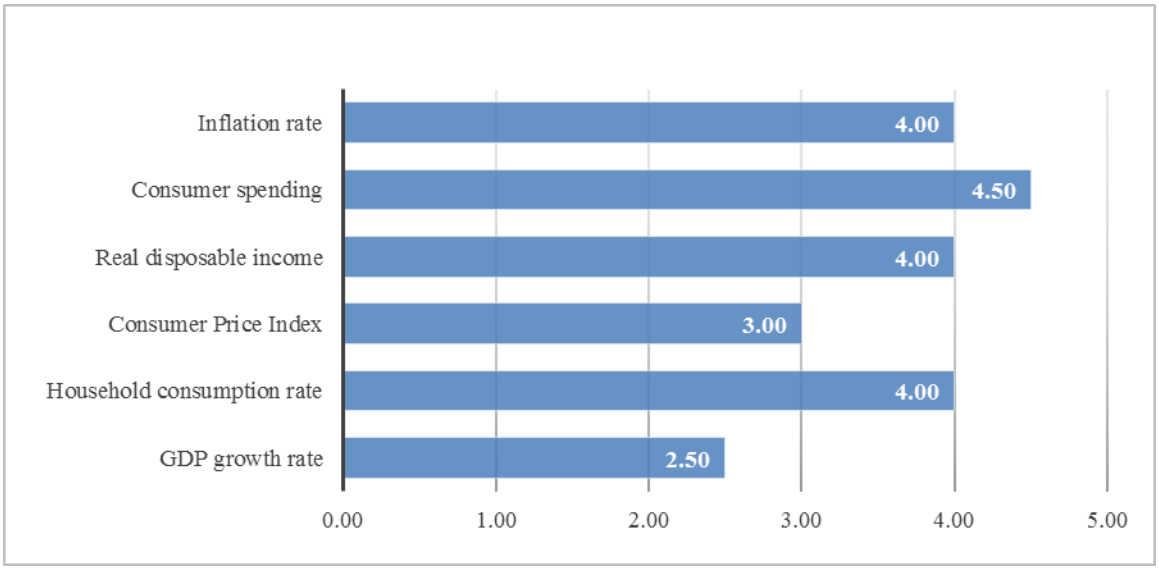


Figure 4.6: **Economic Factors**

Note: The figure above shows the average ratings of the levels of importance of economic factors for the fresh produce agency business.

4.2.1.3 Socio-cultural environment

The total population of the country in 2013 was 52.98 million (StatsSA, 2013). The population growth rate was 2 %. About 29.2 % of the population is aged younger than 15 years and approximately 7.8 % (4.15 million) are 60 years or older. Total migration into the country comprises 1 846 420 people, with about 1 046 641 migrants in Gauteng. The life expectancy for 2013 was 57.7 years for males, and 61.4 years for females. The population diversity of the country is divided into black Africans (79.8 % of total population), coloured people (9 %), white people (8.7 %), and Indian/Asian people (2.5 %) (StatsSA, 2013). The population group of the country is spread across several different religious belief systems which also influence their food consumption choices such as Income distribution is also widespread in the different population groups. Low income groups form the majority of the population and reside in townships and rural areas. Increasing numbers from middle income

groups are moving into the suburbs where most members of the high income group reside. The level of income has an influence on the consumption of fresh produce (fresh fruits and vegetables). According to the Bureau for Food and Agricultural Policy (BFAP, 2014), the consumption of vegetables by the poor or low income group has decreased by 1 %, and increased by 6 % for the middle income group, but has decreased by 7 % for the high income group. The consumption of fruits has increased by 3 % for poor people, increased by 3 % for the middle income group, but decreased by 3 % for high income people (BFAP, 2014). The Living Standards Measurement (LSM) has been carried out according to the classification by BFAP (2014), adapted from South African Audience Research Foundation (BFAP, 2014).

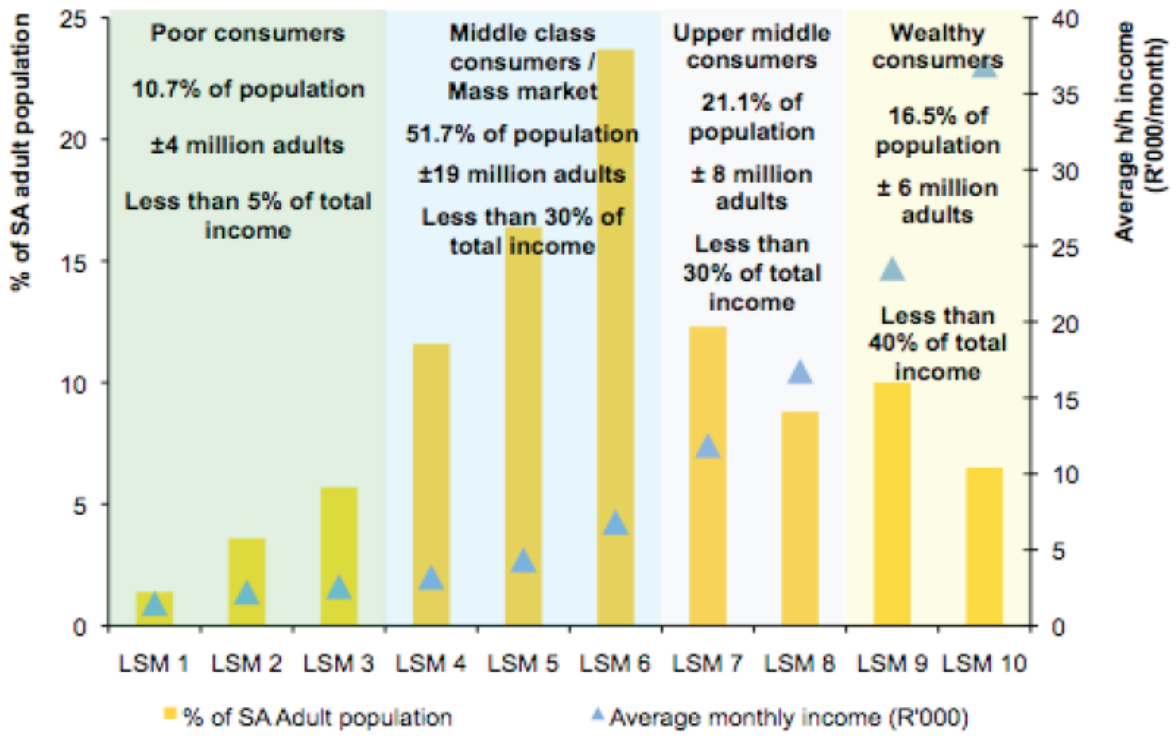


Figure 4.7: **Proportion of RSA Consumers' Income Distribution**

Source: BFAP (2014) adapted from 2013 SAARF All Media and Products Survey (AMPS)

Figure 4.7 above shows the socio-economic conditions of South African household adult consumers (15 years and older), according to the SAARF – LSM segmentation (BFAP, 2014). The LSM segmentation is such that LSM 1 – LSM 3 refers to low income or poor people, LSM 4 – LSM 6 to middle income people, LSM 7 – LSM 8 to the upper middle income people, and LSM 9 to LSM 10 to high income people (BFAP, 2014).

The socio-economic factors were rated by market agents in the Tshwane market to determine their level of importance in the fresh produce agency business. Figure 4.8 below shows the averages of the ratings for each socio-cultural factor. The population of low income people does not have a significant impact on the fresh produce agency business, according to the results shown below. Middle income and high income population average ratings are shown to be above average, meaning they do have impact on fresh produce agents. This means that members of the middle income and high income populations can afford to buy significant amounts of fresh produce for their daily meals. Religious beliefs are found to have below-average impacts on the market agents business. The level of importance for population diversity and emigration is average, meaning that the impact is not significantly important. The population growth rate and immigration rate levels of importance are above average. This means that the population growth rate and immigration have a significant impact on the fresh produce agency business.

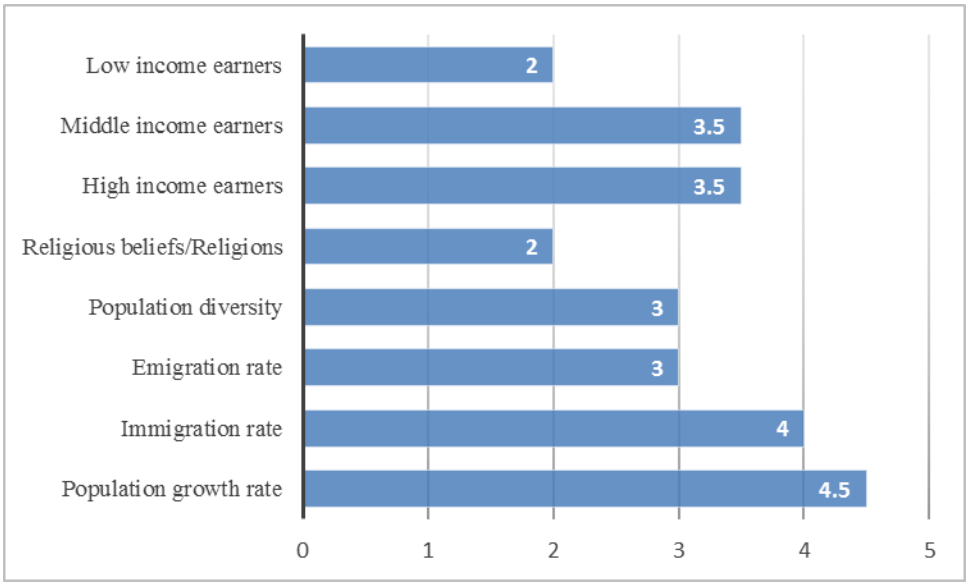


Figure 4.8: **Socio-cultural Factors**

Note: Figure 4.8 above shows the average ratings of the levels of importance of the socio-cultural factors for the fresh produce agents in the Tshwane market.

Source: Own computation

4.2.1.4 Technological Environment

The country has relatively good infrastructure, comprising good road networks, communication networks, electricity supply, and internet services. The country is rated position 40 out of 148 countries in the availability of latest technologies, and 6 out of 148 in mobile broadband subscriptions (World Economic Forum, 2013). To improve the technological status, the government has introduced free wireless internet (WiFi) connectivity in the legislative capital city, Pretoria. This enables and encourages the use of internet services by a wider population group. It is an innovative move by the metropolitan government in the city, and in the entire country generally, as it promotes an innovative and enabling business environment which increases the spectrum and network of information

flow. Additionally, the Tshwane Fresh Produce Market has a large room built to store fresh produce for ripening, cold rooms for highly perishable produce, and storage rooms with state of the art cooling and ventilation systems.

The technological factors were rated to determine the level of importance to the fresh produce agents in the Tshwane market. Figure 4.9 below shows the averages of the rated factors. An overall analysis of these factors shows that all the technological factors have high levels of importance to the fresh produce agency business. The fresh produce agents need to have access to these factors to allow for a favourable business operation.

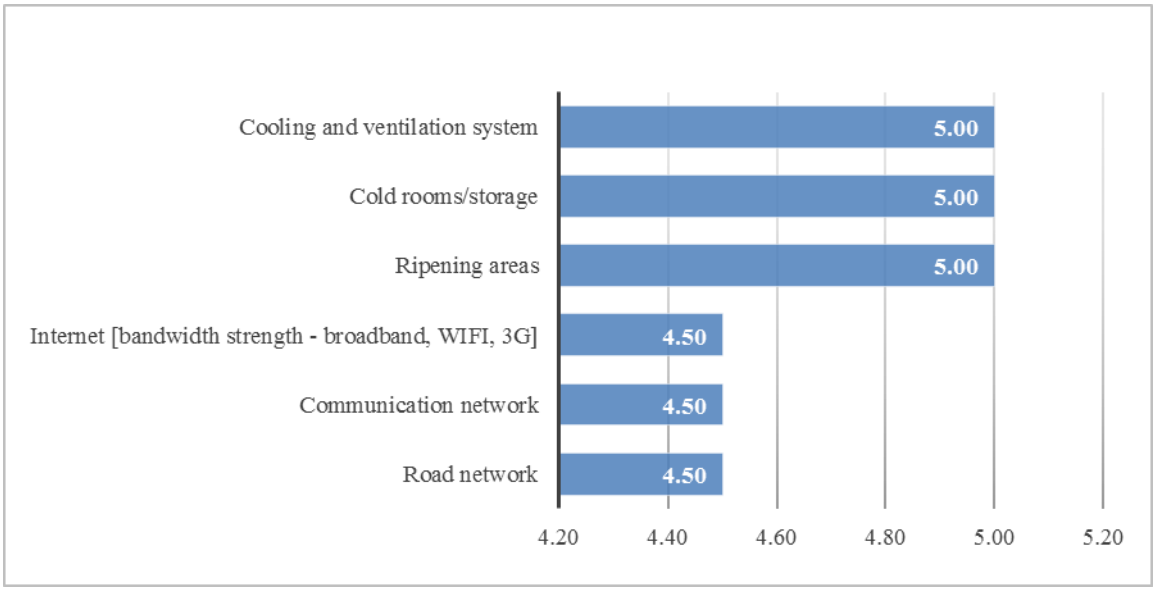


Figure 4.9: **Technological Factors**

Note: Figure 4.9 shows the technological factors considered to have impact on the fresh produce agencies in the Tshwane market.

4.2.1.5 Ecological Environment

Environmental factors refer to weather and climate change related factors. Changes in climate and temperature will impact on the industry more significantly in the production process. A decline in farm production affects the industry more severely. The major changes in climate and the level of warming of the atmosphere which has resulted in global warming, as well as greater awareness where the environment is concerned, have led to the analysis of the impact of environmental factors on business operations. The severity and consequences associated with environmental factors have led to the growing desire to protect the environment by imposing taxes on transportation and emissions. Thus, the country has set out sound environmental laws enacted in the National Environmental Management Act (NEMA). The Act helps to prevent pollution and ecological degradation, promotes conservation, secures ecologically sustainable development, and allows the use of natural resources while promoting justifiable economic and social development (Stein, et al., 2010). Other factors of note for the ecological environment include the weather and climatic condition of the country which is suitable for most agricultural produce.

The ecological factors considered to have an impact on the fresh produce in the market included the weather and climatic conditions, and the National Environmental Act (NEMA). Market agents rated these factors to determine their level of importance to the fresh produce agency business. Weather and climatic conditions have a high impact on the market agents. This is shown by the rating of 5 (most important) in Figure 4.10 below. Weather and climate conditions which have most impact on the fresh produce business occur when it is very hot, causing fresh produce to go bad easily. When it is very cold, or mainly when it is raining heavily, there are few buyers coming into the market and producers have difficulties in

transporting produce from the fields, as roads would be slippery and muddy. The National Environmental Management Act (NEMA) has no significant impact on the fresh produce agents, according to the ratings in Figure 4.10 below.

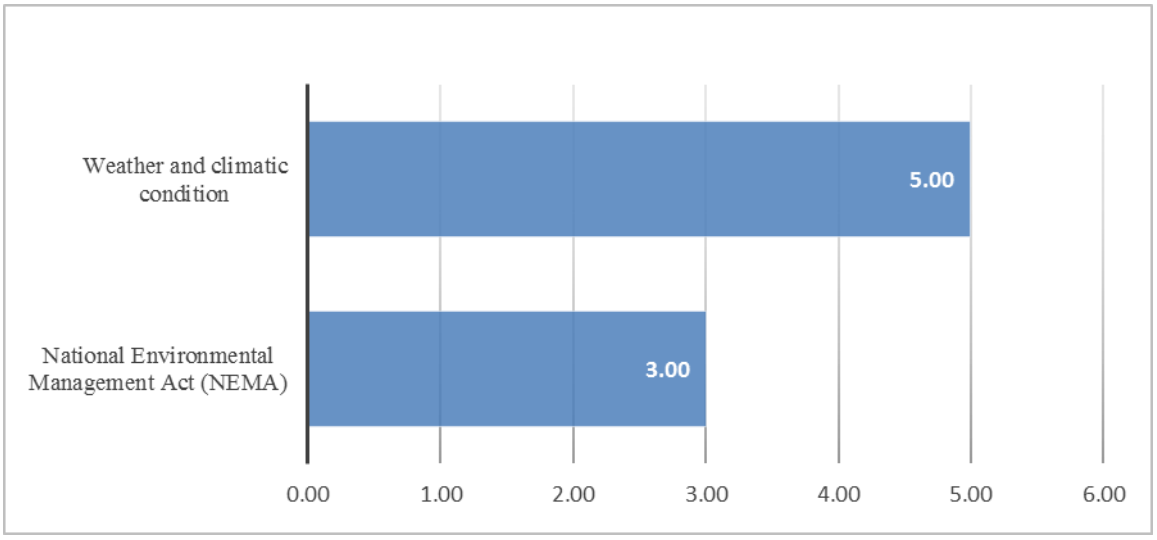


Figure 4.10: **Ecological Factors**

Note: Figure 4.10 above shows average ratings by market agents for the levels of importance and impacts of weather and climatic conditions, and the National Environmental Management Act, on their fresh produce businesses.

4.2.1.6 Legal Environment

The legal environment provides an enabling environment and the conditions on which the market agents should conduct themselves while in the NFPMs. The NFPMs have market by-laws to ensure the compliance of market agents within the market. The by-laws were enacted according to the Local Government: Municipal Systems Act; the Local Government: Municipal Structures Act; and the Local Government: Municipal Finance Management Act, as well as various other pieces of legislation. The Market By-Laws and legislation in the TFPM authorise the metropolitan or local government to administer and provide the enabling

environment for a fresh produce market in the country (City of Tshwane, 2010). The following general regulations have been made for the fresh produce market business operations and activities in the country.

- Regulation 1031 of 12 November 2010: Regulations relating to the grading, packing and marking of potatoes intended for sale in the Republic of South Africa (Government Gazette No 33735, 2010).
- Regulation 69 of 13 February 2009: Regulations relating to the grading, packing and marking of fresh vegetables intended for sale in the Republic of South Africa (Government Gazette No 31828, 2009).
- The Consumer Protection Act, 2008 (Act no 68 of 2008) Regulations (Government Gazette No 34180, 2011)
- The Agricultural Produce Agents Act, 12 of 1992, as amended by the Agricultural Produce Agents Act, No 47 of 2003, regulates the conduct of market agents. This regulation ensures compliance with rules and regulations by market agents. It enforces compliance with the fidelity fund certificate obtained upon registering with APAC (Mogala, 2014).

The legal factors were rated by market agents to determine the level of importance of these factors for the fresh produce agency business. The level of importance of these factors to the market agents determines how they are perceived by market agents as having impact on their business. The Municipal System Act average rating was 4.5, followed by the Municipal Finance Act and the Consumer Protection Act, with an average of 3.5. These ratings show that the impacts of these Acts on the agency business are significant. Regulation 69 is rated lower, below average, indicating that it does have impact on the market agents.

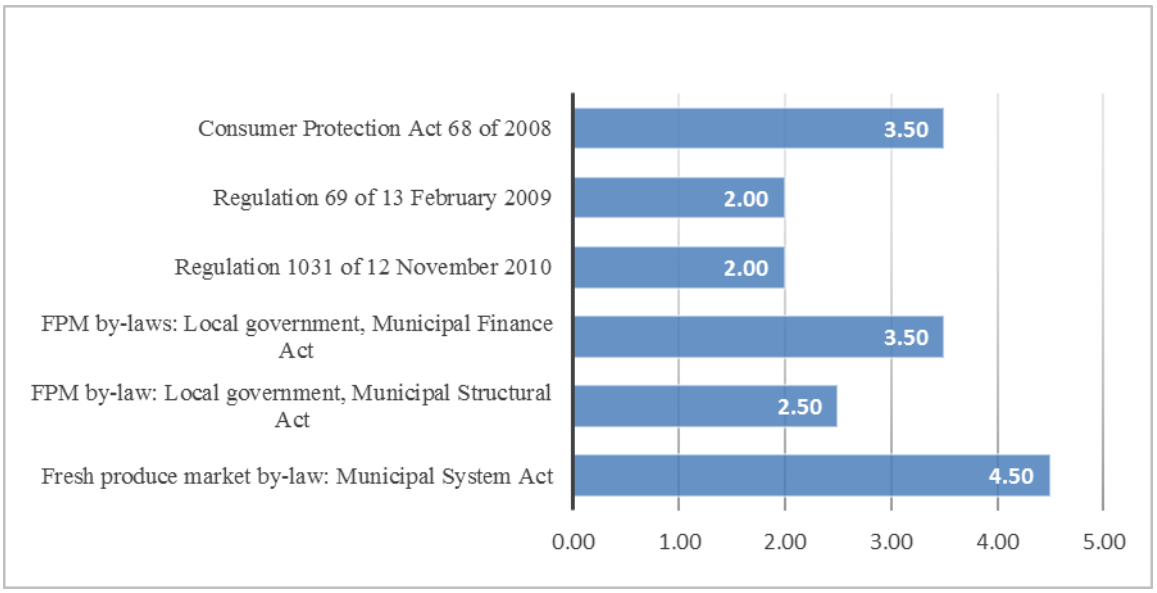


Figure 4.11: **Legal Factors**

Note: Figure 4.11 above shows the legal factors considered to have impact on the fresh produce business in the Tshwane market.

The analysis of these factors will define the necessary conditions for the enabling environment of market agents in the NFPMs in South Africa. The conditions identified show the requirements that the BEE market agents should take into consideration when entering into the fresh produce industry, especially for new agents.

4.2.2 SWOT Analysis

A SWOT analysis was employed to analyse the internal factors (Strengths and Weaknesses) and external factors (Opportunities and Threats) of the BEE market agents in the NFPM. The analysis evaluates the likelihood of a BEE market agent to becoming competitive and profitable in the NFPMs.

4.2.2.1 The Internal Factors

The internal factors for the fresh produce market agents refer to the agents' strengths and weaknesses. The strengths and weaknesses of market agents include the agents' capabilities, human capital, and financial capital, and are also influenced by the '4Ps' of marketing, which refers to product, price, promotion and place (Kotler & Keller, 2012). The strengths and weaknesses of the BEE market are as listed in Table 4.2 below.

Table 4.2: Internal Factors: Strengths and Weaknesses of BEE Market Agents

Strengths	**Weaknesses**
Strong support from government policies – AgriBEE Charter.	Lack of experience in the fresh produce industry and market agency business.
Broad market base, if promoted and marketed appropriately.	Relatively low economies of scale.
Market agents' willingness to support competent black commercial farmers so as to improve their BEE scorecard.	Susceptible to losses encountered by suppliers (black commercial farmers).
	Price taker in the market.
	Product quality is subject to the ability of black commercial farmers to produce and meet the required standards.
	Lack of enough resources to withstand competition on the market floor.
	Poor supply base, need to create supplier relationships and develop trust with suppliers.

4.2.2.2 External Factors

The external factors of the fresh produce market agents refer to the opportunities and threats posed by the macro- and micro-environments. The macro-environment includes the following

factors: political, economic, socio-economic, demographic, technological and legal factors. The micro-environment relates to the customers, competitors, distributors and suppliers (Cuellar-Healey & Gomez, 2013). The opportunities and threats of the BEE market agent are as shown in Table 4.3 below.

Table 4.3: External Factors – Opportunities and Threats

Opportunities	**Threats**
Co-partnering with existing market agents willing to support black commercial farmers.	Volatile fresh produce prices in the market.
Ever increasing working class and middle-class of the black community in South Africa, mainly in the townships.	Changing consumer behaviour, with increases in inflation rates influencing price increases and cost of living.
Potential to develop a supply link straight to townships for the convenience shops, spaza shops, and street vendors.	Government regulations with regard to minimum wage rate are not favourable to the emerging BEE agent – increasing labour costs.
Potential to specialise in organic products or high value products and capitalise on the increasing demand for organic products.	Increasing commodity costs, input costs and the costs of production. Continuous exposure of black commercial farmers to institution barriers which hinder their growth and progress.
Resilient spaza shops and street vendors in	Decrease in market share for the NFPMs due

Opportunities	Threats
the townships, amidst growth and expansion of chain supermarkets.	to competition with large supermarkets.
Land redistribution and reform in South Africa present an increase to black commercial farmers entering the fresh produce industry.	Barriers to entry, existing market agents teaming up against new entrants. Product and service differentiation will be relatively lower when compared to established agents.
	Presence of low switching costs, bargaining power of customers, and power of suppliers.

The SWOT analysis of the BEE market agents' likelihood of surviving and becoming profitable in the NFPMs in the country shows that there are more inhibiting factors than supporting factors. There are more weaknesses and threats than strengths and opportunities of the BEE market agents in NFPMs. These inhibiting factors are a result of the stiff competition among the market agents in the market. The competition that the BEE market agent is likely to face in NFPMs of South Africa is analysed in the next sub-topic on competitor analysis, set out below.

4.2.3 Competitor Analysis

According to Cordes (2013), the business environment on the fresh produce market floor is hostile, and less competent agents cannot be successful in the market. The extent and intensity of the competition in the fresh produce market is explained using Michael Porter's

five forces model. Ehlers and Lazenby (2010) used Michael Porter's fundamental forces for competitor analysis, as listed below:

1) The threat of new entrants
2) Bargaining power of suppliers
3) Bargaining power of buyers
4) The threat of substitute products
5) The rivalry among the existing players

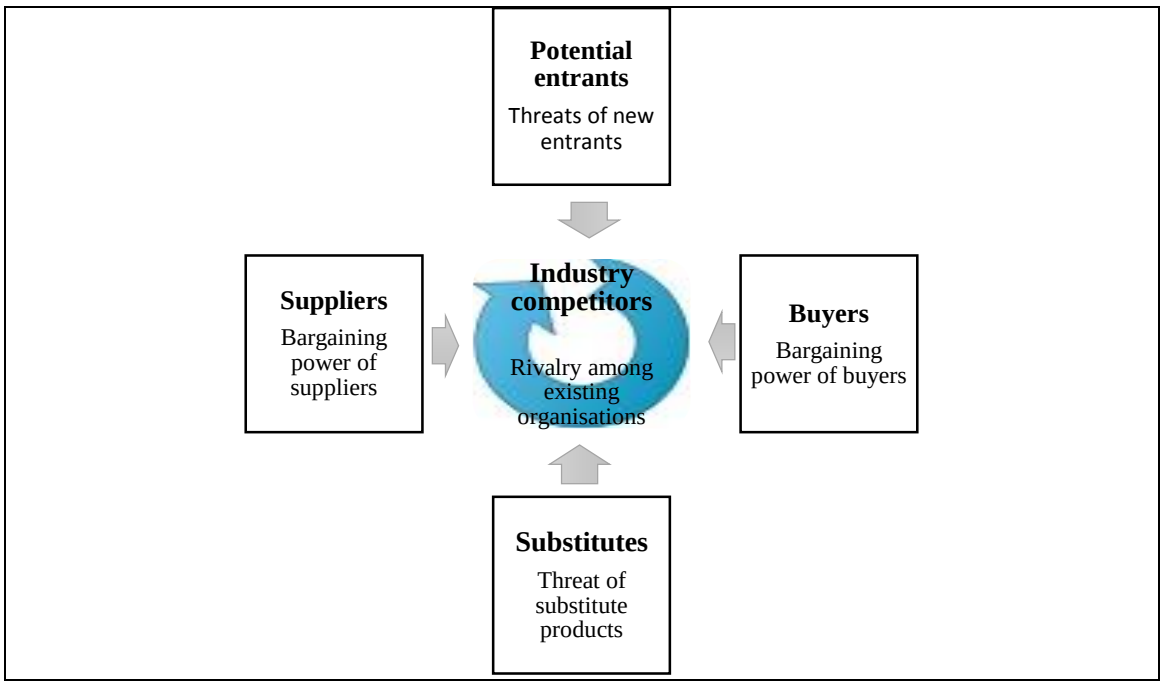


Figure 4.12: The Five Forces Model for Industry Analysis

Source: Adapted from Ehlers & Lazenby (2010); Pearce & Robinson (2003:70)

4.2.3.1 Threat of New Entrants

Competition can be more severe where entry to the fresh produce market is made easier. Thus, the barriers to entry (Morrison, 2012) for new agents include the following:

- Existing loyalty of major suppliers to current agents on the market
- High fixed costs and volatile fresh produce prices
- Government restrictions, regulations and legislation, e.g. food and health regulations
- Entry protection (patents, rights, floor space)
- Economies of product differences
- Switching costs and sunk costs
- Capital requirements
- Absolute cost advantages
- Learning curve advantages
- Expected retaliation by incumbents – existing marketing agents teaming up against the BEE market agent.

4.2.3.2 Bargaining Power of Suppliers

This factor explains the pressure that producers and suppliers of fresh produce can place on the fresh produce industry, mainly on the market agency business. Generally, large suppliers hold substantial power (Morrison, 2012) and they can affect the market agents' margins and volumes. Fresh produce suppliers and producers, mainly large scale, have power if:

- They are the only producers or suppliers of a particular product
- There are no substitutes for the fresh produce being supplied

- The product is extremely important to the market agent and it attracts more buyers
- The supplier has a higher profitability than the market agent
- Supplier switching costs relative to firm switching costs
- The supplier has a high advantage of product differentiation
- The supplier concentration to firm concentration ratio is lower
- The supplier holds a significantly greater potential to integrate forward than does the agent to integrate backward. "*Threat of forward integration by suppliers relative to the threat of backward integration by firms,"* (Morrison, 2012).

4.2.3.3 Bargaining Power of Buyers/Customers

They buyers of fresh produce have the power to impact negatively on the margins and volumes of the market agency, if:

- The buyers buy in large volumes
- Buyers only buy from specific, preferred agents
- Switching costs are low (Ehlers & Lazenby, 2010)
- The product is not extremely important to the buyer; they can do without it for a period of time (Morrison, 2012)
- The buyers or customers are price sensitive
- The buyer/customers to market agents concentration ratio is lower
- The information of buyers is less available.

4.2.3.4 The Threat of Substitute Products or Service

In the situation of fresh produce market agents, the threat of substitute services arises through either the suppliers or the customers. The likelihood that suppliers or customers can switch from one market agent (service provider) to another is a serious threat for the BEE market agent. The BEE market agents are more at risk from this factor because they still need to develop trust with both suppliers and customers, they need to grow and establish a client base, and they need to increase their returns/margins. The threats of substitute products or services are more effective if:

- The suppliers and customers have the inclination to substitute services to a better-performing agency
- The relative costs of changing market agents' services are lower in the absence binding contractual agreements
- The buyers have low switching costs
- Technology change and product or service innovation.

4.2.3.5 Rivalry among Competing Organisations

Markets agents on the market floor compete among each other for customers (Cordes, 2013). The competition on the market floor results in low returns for market agents. New agents are significantly affected in this respect and the possibility of success for them is very low. The high competition on the market floor results from:

- The existence of many market agents of about the same size, with no dominant agency

- Little differentiation among the agents' products and services
- A slow growth or no growth in the fresh produce market share.

4.2.4 Other Factors for BEE Market Agents' Necessary Conditions

Other factors for the necessary conditions for markets agents in the NFPMs include the capital outlays and compliance with financial obligations according to the requirements enacted by APAC and the Market By-Laws. According to the recommendations of the Ministerial Interim Committee, the market agents need to:

- Comply with the code of conduct and with the licensing requirements of agents
- Register with APAC and comply with the requirements enacted for being a member of the institution
- Acquire licences from the market owner and comply with the trading practice rules for booking clerks and sales persons, which are embodied in the sales permit systems issued by market owner
- Market agent staff members need to attend induction training and familiarise themselves with Market By-Laws, notices/directives and accounting systems, and acquire trading skills
- The market agents are required to develop transformation plans based on a scorecard approach which includes employment equity, preferential procurement, social corporate investment and skills development (National Development Agency, 2009).

4.5 Fresh Produce Supply Chain Risk Analysis

4.5.1 Definition of Risk

Risk is defined as having imperfect information where the probabilities are known, and uncertainty exists when these probabilities are not known (Jaffee, et al., 2010; Yeboah, Yi Feng, Daniel & Joseph, 2014). A risk is, therefore, the likelihood (Juttner, Helen & Martin, 2003; Yeboah, et al., 2014) or the possibility that an event will occur and will have negative (Quinn, 2006; Yeboah, et al., 2014) or harmful effects for the normal operation of a business (Christopher & Lee, 2004; Yeboah, et al., 2014) or a supply chain. In the event that a risk occurs within a supply chain, the impacts may be enormous and have multiplier effects. In a fresh produce supply chain, a risk incurred in the production stage is more likely to have impacts on all the functions or nodes of the chain and on the quality and quantity of the produce at the consumption stage. The analysis of risks for the fresh produce supply chain is essential for this study so as to highlight the risks most likely to affect the business operations of BEE market agents.

4.5.2 Risk Analytical Framework

The analysis will involve mapping out the elements or vectors of the fresh produce supply chain for black commercial farmers. This will include an analysis of risks impacting on production, postharvest and storage, handling, distribution and marketing/logistics, retailing, and consumption. The assessment of the risks involved the use of available information on the fresh produce industry and informal interviews with stakeholders within the supply chain. The stakeholders in the fresh produce supply chain include producers (mainly small-scale, black commercial farmers), market agents, fresh produce market representatives, retailers (both formal and informal retail outlets) and consumers. This analysis was informed by a

conceptual framework adopted from Jaffee, et al., (2010) used to assess agricultural supply chain risks for the World Bank and decision makers in agricultural production. The same framework was also adopted by Yeboah, et al., (2014) to assess and investigate agricultural-related risks in Ghana.

The framework shows the enabling environment conditions for risk management purposes within the supply chain at domestic and international level. It comprises the following flows: physical product flows, financial flows, and information flows. These flows are directly and indirectly affected by the fresh produce supply chain risks. The aim of the fresh produce supply chain is to provide the right products (quality and quantity), in the right amounts, at the right place, at the right time, and at competitive costs (Jaffee, et al., 2010). The aim is to enable the successful operation of the supply chain and support services, such as logistical, technical, and financial support.

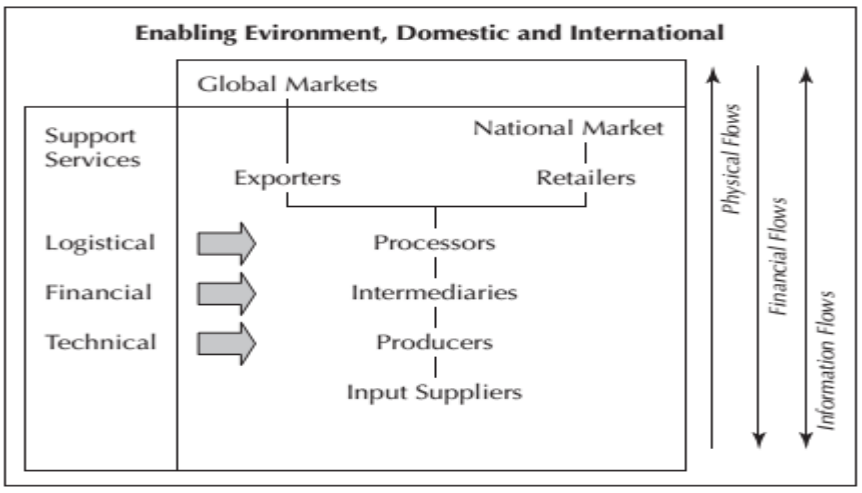


Figure 4.13: **Conceptual Framework for Fresh Produce Supply Chain Enabling Environment**

Source: Jaffee, Siegel & Colin, (2010)

4.5.3 Major Risks in the Fresh Produce Supply Chain

The fresh produce supply chain is susceptible to a number of risks. Jaffee, et al. (2010) categorised and identified major risks affecting agricultural supply chains as being caused mainly by weather/natural disasters, biological, and environmental events. Other sources of major risks in the fresh produce industry were identified to come from issues related to markets, logistics and infrastructure, management and operational risks, public policy and institutional risks, and political issues (Jaffee, et al., 2010). These issues or risks significantly influence and impact on the domestic enabling environment for fresh produce supply chain in South Africa.

Risks caused by weather and natural disasters refer to floods resulting from heavy/excess rainfall and storms; drought caused by no rainfall and prolonged high temperatures; frost/snowing caused by very low temperatures; and strong winds resulting from hurricanes, cyclones and typhoons. These events have direct impacts on the production and distribution of fresh produce, specifically at levels which subsequently affect the quality and quantity available for marketing and consumption. The indirect effects are observed at the decision-making process levels (Jaffee, et al., 2010) at which markets agents are most exposed, owing to their strategic role in the distribution and marketing of the fresh produce. BEE market agents are most exposed because of the severity of the weather and natural disaster risk impacts, which the small-scale farmers or black commercial farmers are more severely affected by. This is because they can barely afford crop insurance, do not have access to secondary irrigation systems, and do not have greenhouses and structures to control drastic changes in climatic weather conditions. Weather and natural disasters increase the prevalence of pests and diseases, thus black commercial farmers are more susceptible to the risks of pests

and diseases, as they cannot afford the costs of technologies and mechanisms to fight these effects.

Risks caused by weather and natural disasters have influences on risks caused by biological events and environmental risks. These risks directly affect the production stage of the supply chain and indirectly affect the distribution and marketing function. The biological risks result from the spread and manifestation of pests and diseases affecting the crops and the final produce. The impacts of these risks severely affect the quality and quantity of the fresh produce. Moreover, environmental risk arises as a result of increased pest and disease manifestation, which leads to the increased use of inorganic chemicals, such as pesticides, insecticides and herbicides. The environmental risks eventually lead to the contamination of produce at the production, postharvest and distribution stages. Environmental risks also perpetuate the causes of climate change which brings about weather risks.

The impacts of the abovementioned risks have significant effects on the quality and quantity of fresh produce to be supplied to the markets. The risks have effects on the demand and supply of fresh produce throughout the supply chain and have severe impacts on the selling prices in the markets. The risks on the demand and supply of inputs and outputs at production level result in risks or challenges in meeting market requirements. This leads to market-related risks which include changes in fresh produce prices in the market, timing of fresh produce delivery, food safety requirements, and changes in supply chain or enterprise reputation and dependability (Jaffee, et al., 2010).

Table 4.4: Major Risks Affecting the Agricultural Supply Chain

RISK SOURCE	TYPES
Weather Related Risks	Periodic deficit and/or excess rainfall or temperature, hail storms, strong winds
Natural Disasters (including extreme weather events)	Major floods and droughts, hurricanes, cyclones, typhoons, earthquakes, volcanic activity
Biological and Environmental Risks	Crop and livestock pests and diseases, contamination related to poor sanitation, human contamination and illnesses, contamination affecting food safety, contamination and degradation of natural resources and environment, contamination and degradation of production and processing processes
Market Related Risks	Changes in supply and/or demand that impact on domestic and/or international prices of inputs and/or outputs, changes in market demands for quantity and/or quality attributes, changes in food safety requirements, changes in market demands for timing of product delivery, changes in enterprise/supply chain reputation and dependability
Logistical & Infrastructural Risks	Changes in transport, communication, energy costs, degraded and/or undependable transport, communication, energy infrastructure, physical destruction, conflicts, labour disputes affecting transport, communications, energy infrastructure and services
Management and Operational Risks	Poor management decisions in asset allocation and livelihood/enterprise selection, poor decision making in use of inputs, poor quality control, forecast and planning errors, breakdowns in farm or firm equipment, use of out-dated seeds, not prepared to change product, process, markets, inability to adapt to changes in cash and labour flows, etc.
Policy and Institutional Risks	Changing and/or uncertain monetary, fiscal and tax policies, changing and/or uncertain financial (credit, savings, insurance) policies, changing and/or uncertain regulatory and legal policies, and enforcement, changing and/or uncertain trade and market policies, changing and/or uncertain land policies and tenure system, governance related uncertainty (e.g. corruption), weak institutional capacity to implement regulatory mandates
Political Risks	Security-related risks and uncertainty (e.g. threats to property and/or life) associated with Politico-social instability within a country or in neighbouring countries. Interruption of trade due to disputes with other countries. Nationalisation/confiscation of assets, especially of foreign investors.

Source: Jaffee, Siegel & Colin (2010).

Other types of major risks for the fresh produce supply chain include logistics, management/operations, and institutional risks. These risks are explained in Table 4.4 above. Logistic risks are associated with uncertainties and changes in costs of transportation, communication and energy (Jaffee, et al., 2010). An increase in the costs of transportation, communication or energy will increase the costs of production, which puts black commercial

farmers at a disadvantage owing to their limited capital. This may eventually nullify the success of a BEE market agency in the fresh produce industry. Other logistic risks include delays or poor timing in delivery and poor communication. The success of the fresh produce supply chain for black commercial farmers also relies mostly on management and decision making at production and marketing (market agencies) levels. A risk in this regard is represented by uncertain or poor management and poor decision-making processes.

Institutional risks which are mainly associated with government policies have great impact on the success of the fresh produce supply chain. Black commercial farmers in the country are not relatively successful, owing to their inability to participate in the integrated agribusiness supply chain. The inability or uncertainty of government policies in assuring the enabling conditions for black commercial farmers to access the integrated supply chain increases the risks of failure for black farmers in the supply chain.

The risks inherent in fresh produce tend to increase the costs of production, storage, distribution and marketing. This eventually decreases the returns in profits for small-scale producers, thus rendering it economically not feasible for them to sustain and maintain the required standards and withstand the competition in the fresh produce markets.

4.5.4 Risks Management Measures

Risks management within a supply chain prevents or reduces uncertainties and unfavourable events impacting on the flow of physical products, and on financial and information flows. Risks within a fresh produce supply chain have negative effects on all the elements and

functions of the supply chain, from "farm to fork" (Jaffee, et al., 2010). The constraints of the fresh produce supply chains also affect other functions of supply chains that are interlinked with the fresh produce industry and agricultural supply chains (Jaffee, et al., 2010). Managing and preventing the constraints in the fresh produce supply chain enhances the accomplishment of the overall objective of agricultural supply chain management, namely "to provide the right products (quantity and quality), in the right amounts, to the right place, at the right time, and at competitive cost" (World Bank, 2011).

Risk management and mitigation measures for the BEE fresh produce supply chain should apply both informal and formal strategies (Louw, et al., 2013), ex ante and ex post (Jaffee, et al., 2010). Ex ante risk management involves risk management taken prior to risk occurrence and ex post risk management is done after the risk has occurred. Ex ante actions can reduce risk (e.g. eradication of pests) or lower exposure to risks (e.g. pest resistant crop varieties, crop diversification). Ex ante risk mitigation can also be realised through the purchase of insurance, and by other responses to expected losses such as self-insurance (e.g. precautionary savings) or reliance on social networks (e.g. access to community savings). Ex ante actions are taken before a risk event occurs, and ex post management takes place after its realisation. Ex post risk management activities are applied after the risk has occurred, often through the selling of assets and seeking temporary employment, and these tend to have high opportunity costs. Informal risk management strategies are generally more prevalent at the farm level, where they are used to mitigate risk. Small-scale farmers can use informal risk management strategies to mitigate and share the risks. BEE market agents adopt formal risk management tools usually taking the form of and/or use of financial instruments.

4.6 Conclusion

This chapter has explained and determined the necessary conditions for the enabling environment of a BEE fresh produce supply chain in South Africa. The analysis showed that the country has a stable political environment that enables businesses and a competitive economic environment. The enacted policies for supporting a business environment are in accordance with the necessary conditions for the successful and competitive operation of a BEE fresh produce supply chain. The same is true for the economic environment. The economic indicators show an enabling environment for successful and competitive business operations in the country. In addition, the country also has diverse socio-economic conditions, with an increasing middle income population group. This necessary condition places the business environment of the country in a distinct position with comparative advantage. South Africa, generally, has a fast growing and developing business and economic environment.

Notwithstanding the enabling conditions in the country, business operations are susceptible to general risks when faced with imperfect information. The fresh produce supply chain is vulnerable to uncertainties and the likelihood of risk events which may occur. The identified risks mentioned in this chapter are general and if managed accordingly, i.e. ex ante and ex post, the BEE fresh produce supply chain could be competent enough to survive the prevailing conditions. The following chapter describes the elements and characteristics necessary for the success of the BEE fresh produce supply chain. It also identifies the conditions required by a BEE market agent to be competitive in the fresh produce market.

CHAPTER 5: FRESH PRODUCE CHARACTERISTICS AND MARKET AGENTS REQUIREMENTS

5.1 Introduction

This chapter identifies and describes the attributes of a supply chain for fresh produce involving market agents and the fresh produce market. The supply chain attributes include the characteristics of fresh produce, of the supplier or producer, of market agents, and of retailers. The chapter therefore describes the characteristics of fresh produce and the requirements of market agents in the fresh produce market which are essential for the success of the BEE supply chain.

5.2 Characteristics of Fresh Produce

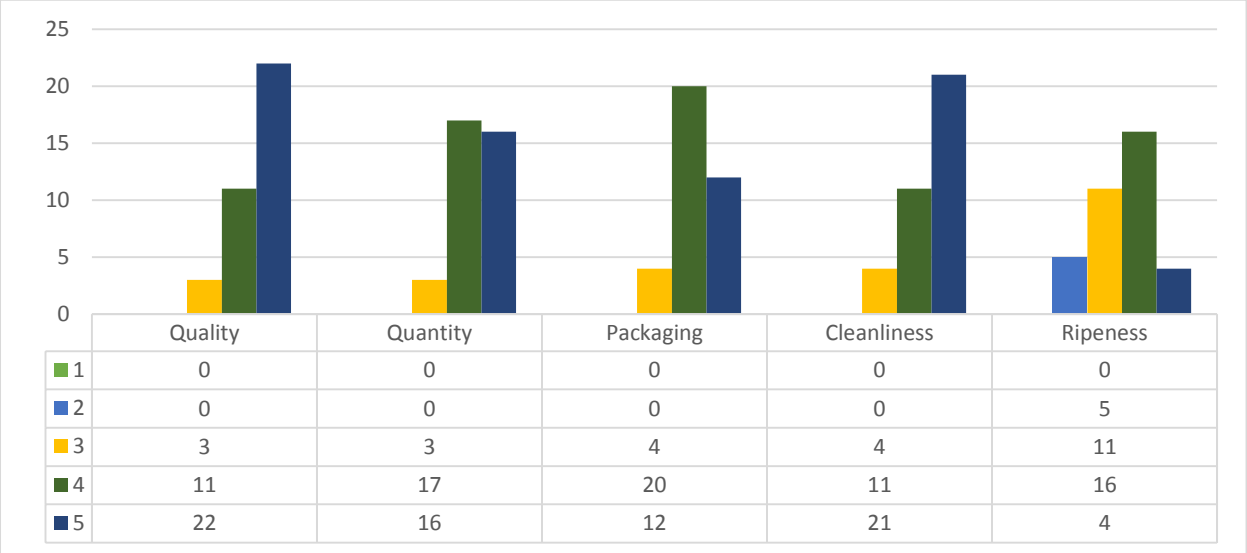
The characteristics of fresh produce relate to quality, freshness, quantity, and cleanliness, as well as sorting, grading, packaging, labelling, and degree of ripening and bruising. To identify these characteristics, an importance measure, utilising a Likert-scale rating procedure contained in a questionnaire, was used in a survey of market agents and retail outlets. The rating procedure was a Likert-scale of 1 to 5 (1 less important – 5 more important).

The survey was undertaken to determine the commonly accepted standards of fresh produce from every day handlers of the produce. The quality standards in South Africa are determined by the Regulation Act of Fresh Produce (Regulation 69), which stipulates the required quality standards for fresh produce to be sold for human consumption in the country (Government Gazette No 33735, 2010). The Act is in compliance with World Health Organisation standards and Protocols on Good Agricultural Practice (EUROGAP, GlobalG.A.P),

International Standards Organisation (ISO); CODEX, Sanitary and Phytosanitary measures (SPS), and HACCP (Frohberg, et al., 2006). Thus, testing the perceptions and requirements of daily handlers of produce in the market was crucial to this study.

5.2.1 Fresh Produce Market Agents

In undertaking the importance measure of the characteristics of fresh produce, the first to be sampled were market agents. They were asked to respond on the characteristics of fresh produce selected for the study and the frequency of their responses are summarised in Figure 5.1 below.



	Quality	Quantity	Packaging	Cleanliness	Ripeness
1	0	0	0	0	0
2	0	0	0	0	5
3	3	3	4	4	11
4	11	17	20	11	16
5	22	16	12	21	4

Figure 5.1: Characteristics of Fresh Produce – Market Agents

Figure 5.1 above shows the characteristics of fresh produce and their levels of importance according to market agents' perceptions. Quality was rated highly/very important by 61 % of market agents, by 31 % as more important, and by 8 % as important. This was followed by

the cleanliness of the produce, which mainly refers to the physical appearance, and 58 % of the market agents rated it highly/very important, 31 % rated it more important (above average) and 11 % rated it important. Quantity, which refers to the volumes of fresh produce supplied to the market, was rated highly important by 44 %, more important by 47 % and important by 8 % of the market agents. Among the characteristics of fresh produced sampled, only ripeness had a rating of below average importance by 14 % of the market agents. This characteristic was rated highly important by 11 % and more important by 44 % of the market agents. The justification for the invariable ratings of the ripeness characteristics is that it is dependent on the type of fresh produce being referred too. Some fresh produce, such as tomatoes and deciduous fruits, do not need to be fully ripe when sold in the market and so have a longer shelf life. The ratings for the levels of importance of the characteristics of fresh produce shows that they are important to the business structures of markets agents.

5.2.2 Retail Outlets

The same characteristics (quality, quantity, cleanliness, packaging, and ripeness, including grading and labelling) were sampled at selected retail outlets buying their fresh produce from the Tshwane Fresh Produce Market. These retail outlets sampled include hawkers, greengrocers and small supermarkets. The retail outlets were sampled so as to help determine the features and importance to final consumers and to position the production levels according to consumer preferences. Figure 5.2 below shows the summary of the greatest responses from the sampled retail outlets.

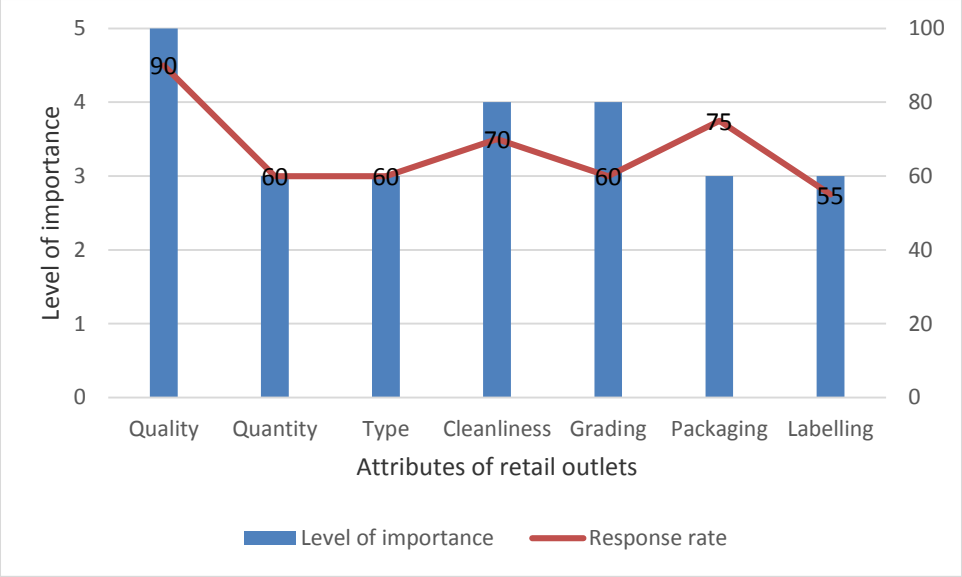


Figure 5.2: Fresh Produce Characteristics – Retail Outlets

Figure 5.2 above shows the results of attributes required by retail outlets in order meet the requirements for fresh produce to be sold within their business structures. About 90 % of the retail outlets, shown by the pointer of the line on the figure above, rated quality highly as a very important requirement for fresh produce to be brought in by them for sale in their businesses. Quantity was rated averagely important by 60 %, as was the type of fresh produce. The relatively lower rating of quantity was influenced by the fact that the greatest number of retail outlets were street vendors, who do not buy in large quantities. Street vendors, hawkers and bakkie traders do not require highly perishable fresh produce, and they will buy lesser quantities of highly perishable fresh produce. Supermarkets and greengrocers have cold storage facilities and refrigerators for highly perishable fresh produce. The type of fresh produce required by these retail outlets needs to be clean and graded, and this is observed from the results shown on the figure above, in which cleanliness and grading were rated above averagely important by 70 % and 60 % of supermarkets and greengrocers, respectively. Packaging and labelling was rated averagely important by 75 % and 55 % of

supermarkets and greengrocers, respectively. On average, labelling was rated relatively lower than all the other attributes, meaning that it is not necessarily important, but it is a requirement for traceability.

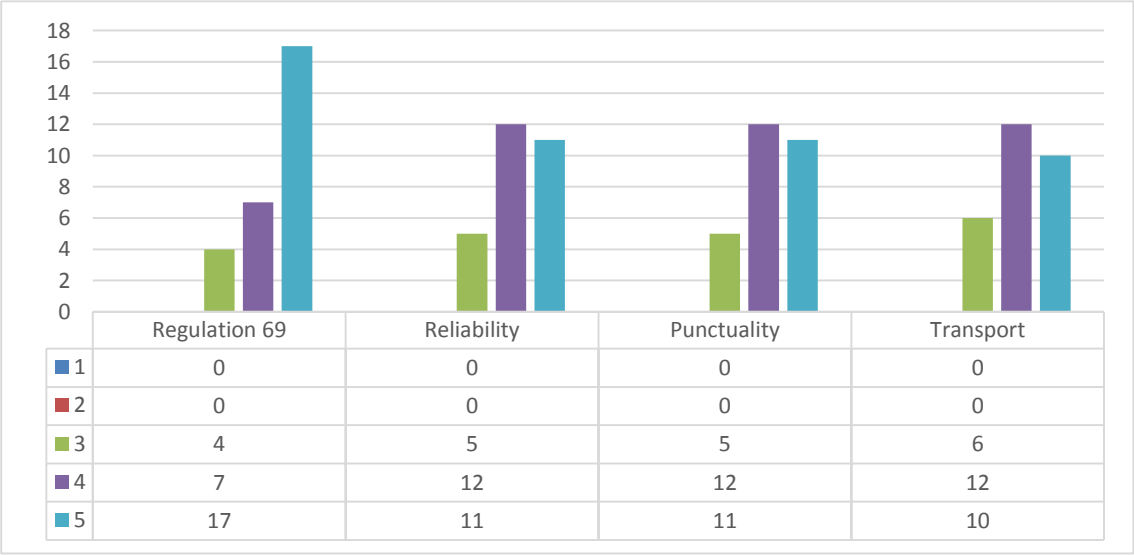
The analysis above places a highlight on what fresh produce market agents should focus on as they prepare and plan for their businesses. It is a necessity to prioritise good quality fresh produce in order to survive in the agency business, as buyers require high quality fresh produce. The findings of the study are similar to what was found by Bond, et al., (2006) when analysing consumer buying decisions concerning fresh produce in America. Their findings showed that consumers tend to place a high value on firmness and texture, freshness and taste, safety, and value for the produce. Generally, these findings reflect that buyers of fresh produce have high expectations on quality. The fresh produce market agents therefore need to strategise as to where to obtain reliable supplies which are good in quality, well cleaned, packaged and graded.

5.4 Requirements of Market Agents concerning Suppliers of Fresh Produce

Market agents in the fresh produce markets are governed by a set of regulations and bylaws which help structure their businesses for the benefit of all parties involved. They are the middlemen between fresh produce suppliers and retail outlets. They sell fresh produce on behalf of the suppliers which they represent. Owing to competition for customers, market agents have set aside certain requirements expected from their suppliers of fresh produce so as to be able to deliver appropriately to, and satisfy, their customers.

The requirements of fresh produce agents which are expected from suppliers in addition to the standards required by the NFPM (the Regulation Act 69) relate to the good quality of fresh produce, the quantity that each supplier can bring, the reliability of the supplier, access to appropriate transport by the supplier, and punctuality of the supplier (no delays in supply). Generally, market agents accept fresh produce that is delivered on time, in good quality, with no damages or no bruising caused by poor production management and inappropriate transportation. This means that market agents expect the supplier or producer to be reliable in supplying produce, to be punctual with delivery, and to provide fresh produce complying with Regulation 69. This regulation sets the minimum requirements for fresh produce quality and it ensures that the produce is fit for human consumption.

Figure 5.3 below shows a summary of frequencies from market agents' responses on what they require from their suppliers and the perceived level of importance. All the factors sampled as the requirements of market agents had no ratings of less important, indicating that they are all essential to all market agents.



	Regulation 69	Reliability	Punctuality	Transport
1	0	0	0	0
2	0	0	0	0
3	4	5	5	6
4	7	12	12	12
5	17	11	11	10

Figure 5.3: **Requirements of Market Agents from Suppliers**

The same factors identified above as the requirements of market agents were modelled against the possibility of BEE market agents' success. The analysis is presented below, which shows how the interaction of these factors has an influence on the decision of a market agent on the presented question.

5.5 Market agents' Perceptions on the Success of a BEE Supply Chain

5.5.1 BEE Market Agent

Market agents were asked to state their view whether they agreed or disagreed that a BEE fresh produce supply chain in the market could be successful. A BEE fresh produce supply chain in this study is defined as a fresh produce supply chain involving black commercial farmers' fresh produce which is sold on the NFPM by market agents. Any of the market agents in the market that might sell fresh produce from black commercial farmers will be considered as BEE market agents. The understanding in this regard is that black commercial farmers, specifically in South Africa, have been categorised as small-scale farmers and they are considered to be unable to produce competitive products in the market (Kirsten & Van Zyl, 1998). A question was therefore posed to determine the factors that a market agent would base his or her decision on. Addressing this question is important in establishing the potential for the success of black commercial farmers, and thus the potential for a successful BEE fresh produce supply chain.

5.5.2 BEE Success Factor Analysis

There are 8 900 farmers supplying the NFPM in the country, 2 600 are black commercial farmers mainly from the Free State province, KwaZulu-Natal, Limpopo and North West

(Dodds, 2015). The 8 900 farmers supply approximately 55 000 tons of fresh produce to the market monthly. On this amount of fresh produce brought into the market, 3 300 tons which is 6% of the total is supplied by small-scale farmers/black commercial farmers (Dodds, 2015). The success of a BEE fresh produce supply chain is essentially dependent on the numbers of fresh produce farmers who might find their way to access the fresh produce markets. To determine the possibilities of success, market agents in the fresh produce markets in the country were sampled to give their views on how they perceive the success of a BEE market agent. The agents were asked to respond on a 1 to 5 point Likert-scale question of strongly disagree, to strongly agree, whether small-scale farmers (black commercial farmers) and BEE market agents (agents specialising in produce from black commercial farmers) could be successful in the national fresh produce markets.

A significant number of market agents stated that a relatively large category of fresh produce from black commercial farmers cannot compete well in the fresh produce market. Generally, the produce from these farmers tend to have a short shelf life, attributable to low production standards and poor post-harvest management. The production scales of these farmers then tend to be low, thus classifying them as small-scale farmers (Kirsten & Van Zyl, 1998), and selling their produce through the NFPM would not be economically feasible.

The study adapted an Ordinal Logistic Regression Model (Polytomous Universal Model – PLUM) from Lund and Lund (2013), and used SPSS (Statistical Package for Social Sciences) to analyse the relationship of the factors influencing the success of a BEE fresh produce supply chain and BEE market agents. The score of measure that was to be observed in the analysis was whether the market agents would agree or disagree that the BEE supply chain

would be successful and determining the probability that the ratings of quality, transport, reliability, punctuality, and experience have an influence in, or relationship with, the overall judgement. The judgement of the events or ratings was modelled on the following form of odds:

θ_1 = probability (score of 1)/probability (score greater than 1)

θ_2 = probability (score of 1 or 2)/probability (score greater than 2)

θ_3 = probability (score of 1, 2, or 3)/probability (score greater than 3)

θ_4 = probability (score of 1, 2, 3, or 4)/probability (score greater than 4)

$$\theta_j = \text{prob}(\text{score } \leq \text{j}) \div \text{prob}(\text{score } > j) \quad \text{(1).}$$

Therefore, the ordinal logistic model is:

$$ln(\theta_j) = \alpha_j - \beta_j X_j \quad \text{(2).}$$

Where:

j	goes from 1 to 4 (the number of categories (5) minus 1)
α_j	intercept or threshold value
β_j	coefficient for the predicted variables

$$l = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \cdots + \beta_k \quad \text{(3)}$$

The ordinal logistic regression formula representing the relationship of the independent variables to the dependent variable:

Dependent variable – BEE market agents (1 strongly disagree, 2 slightly disagree, 3 disagree, 4 slightly agree, and 5 strongly agree).

Independent variables – (Quality, quantity, reliability, punctuality, and transport had the following rating scores – 1 less important, 2 below averagely important, 3 important, 4 more important, and 5 very important).

Experience was a continuous variable treated as covariates.

However, in the PLUM analyses, quantity was taken out to control for multicollinearity (assumption 3, as stated in the model description given in Chapter 3 of this study).

5.5.3 PLUM Output – the Perceptions of Market Agents

The output of the regression analysis (PLUM) is as show in Table 5.1 below. The proportional odds assumption states that the relationship between the lower versus the highest categories of the response variables are the same as those that describe the relationship between the next lowest and higher categories.[9] Thus, the hypothesis for the parallel test or the proportional odds tests is that the relationship of all the pairs of groups is the same, i.e.:

Null hypothesis: H_0 = there is no difference in the coefficients

Alternative hypothesis: H_a = there is a difference in the coefficients.

[9] ASPC _ v13, Chapter 4: Ordinal Regression – IBM SPSS statistics guides. www.norusis.com/ASPC_v13.

The result of the proportional odds analysis shows a non-significant probability value of p = 0.994, thus we do not reject the null hypothesis. Therefore, there is no difference in the coefficients, and the coefficients are the same across responses.

The test to show whether the data fits the model shows a Nagelkerke R^2 of 0.607, which indicates that approximately 61 % of the data is explained by the model. The relationship of the factors influencing the perceptions of market agents is explained by the model. The explanatory variables (independent variables) as shown in Table 5.1 below are statistically significant. These variables are: Experience of the market agent (p = 0.032), Quality=4 (p = 0.007), Transport=4 (p = 0.057), Punctuality=3 (p = 0.017), Punctuality=4 (p = 0.049). This shows that the independent variables do have an influence on the perceptions of market agents in defining the dependent variable (BEE market agents). The PLUM output in Table 5.1 below shows:

- The odds ratio of market agents quality to be more important in considering BEE market agency not being successful was 50.167 (95 % CI, 2.873 to 876.093) times that of considering quality less important, a statistically significant effect, Wald χ^2 (1)[10] = 7.199, p = 0.007.
- The odds ratio of market agents transport to be more important in considering BEE market agency not being successful was 0.104 (95 % CI, 0.01 to 1.071) times that of considering transport less important, a statistically significant effect, Wald χ^2 (1) = 3.618, p = 0.057.

[10] (df) degrees of freedom.

- The odds ratio of market agents punctuality to be important in considering BEE market agency not being successful was 57.374 (95 % CI, 2.033 to 1618.961) times that of considering punctuality less important, a statistically significant effect, Wald χ^2 (1) = 5.647, p = 0.017.
- The odds ratio of market agents punctuality to be more important in considering BEE market agency not successful was 8.331 (95 % CI, 1.008 to 68.826) times that of considering punctuality to be less important, a statistically significant effect, Wald χ^2 (1) = 3.872 (1), p = 0.049.

An increase in age (expressed in years) was associated with an increase in the odds of considering a BEE fresh produce agency not being successful, with an odds ratio of 1.144 (95 % CI, 1.012 to 1.294), a statistically significant effect, Wald χ^2 (1) = 4.59, p = 0.032.

Table 5.1: **Parameter Estimates – PLUM Output**

	Estimate	Std. Error	Wald	df	Sig	Lower Bound 95 % CI	Upper Bound 95 % CI	Exp._B	Lower Bound 95 % CI	Upper Bound 95 % CI
[BEE_M_Agent = 1]	4.448	2.231	3.974	1	0.046	0.075	8.82	85.427	1.078	6770.89
[BEE_M_Agent = 2]	6.763	2.476	7.462	1	0.006	1.911	11.614	864.818	6.757	110687.484
[BEE_M_Agent = 3]	8.864	2.769	10.25	1	0.001	3.437	14.29	7070.13	31.096	1607508.75
Experience	0.135	0.063	4.59	1	0.032	0.011	0.258	1.144	1.012	1.294
[Quality=3]	2.261	1.562	2.095	1	0.148	-0.8	5.322	9.592	0.449	204.84
[Quality=4]	3.915	1.459	7.199	1	0.007	1.055	6.775	50.167	2.873	876.093
[Quality=5]	0a			0				1		
[Transport=3]	1.885	1.226	2.365	1	0.124	-0.517	4.288	6.588	0.596	72.799
[Transport=4]	-2.262	1.189	3.618	1	0.057	-4.592	0.069	0.104	0.01	1.071
[Transport=5]	0a			0				1		
[Reliability=3]	2.072	1.352	2.35	1	0.125	-0.577	4.721	7.941	0.562	112.308
[Reliability=4]	-1.506	1.029	2.14	1	0.144	-3.523	0.512	0.222	0.03	1.668
[Reliability=5]	0a			0				1		
[Punctuality=3]	4.05	1.704	5.647	1	0.017	0.71	7.39	57.374	2.033	1618.961
[Punctuality=4]	2.12	1.077	3.872	1	0.049	0.008	4.232	8.331	1.008	68.826
[Punctuality=5]	0a			0				1		

Link function: Logit

a – This parameter is set to zero because it is redundant.

5.5.4 The Influence Given to Decision Making

In essence, market agents strongly agree that BEE market agents cannot be successful in the National Fresh Produce Markets (NFPM). The factors that had high odds ratios, and are statistically significant, were punctuality, quality and transport. The relationship measure of these factors in influencing the perceptions of market agents is that a market agent that stated punctuality to be important was more likely to also state that quality and transport were as much important. Therefore, BEE market agents need to consider these factors more critically in addition to other requirements for establishing a successful BEE supply chain in the market, such as client base, acquiring market floor space, having sufficient start-up and operational capital, and gaining trust or confidence of suppliers.

5.6 Fresh Produce Market Agency Characteristics

A business concept from Osterwalder and Pigneur (2011) was used to identify the characteristics of market agencies for enhancing competitive operations in the market. The business concept was defined as a rationale of how a company can create, deliver and capture value products and services to customers. The key factors sampled in this study include value propositions, channels, and key resources. These factors were considered essential in determining the factors and conditions necessary for the establishment of a competitive market agency in the fresh produce market.

5.6.1 Value Propositions

Value propositions observed in this study had a focus on the value of products and services for customers that the market agents have to serve. These customers included the local retail

outlets, export markets and members of the public that buy direct from the produce market. Hawkers (street vendors), greengrocers, and small supermarkets comprised the retail outlets that were found to be sourcing their fresh produce from the produce market. The perceptions of the value propositions of products and services were tested from various fresh produce markets agents and retail outlets to determine the level of importance of each proposition. The value propositions that are communicated to ensure that customers appreciate the financial, logistical and psychological benefits include (Kotler & Keller, 2012):

- Customisation or tailoring of products and services to the specific needs of the individual customer or customers, such as having different packaging sizes;
- Brand status of the product; and
- Cost reduction strategies.

5.6.1.1 Tailoring products and services

In general, different customers require products and services to be customised according to their differing quality and quantity requirements or needs. Tailoring products and services is basically catered for by providing specific sizes and qualities of products and services, according to customers' requirements. In the fresh produce market, tailoring also includes storing produce in cold storage and ripening the fresh produce, and market and supply management until produce leaves the market floor for transmission to the final and intermediate users. This includes keeping the market clean and safe, according to a strict application of relevant laws.

Retail outlets and market agents require a high and acceptable quality of produce from farmers and suppliers. The study confirms that the requirement of good quality or high quality of fresh produce is crucial to retail outlets and market agents, and it is critical to the success of their businesses. This is true, according to Cordes (2014), quoting Clive Garret, the marketing manager for ZZ2,

> "*If we don't have consumers, we don't have a business. We want to excite the consumer, not only with top-quality products, variety and convenience, but also by incorporating those characteristics in good packaging, which will ultimately offer consumers better value for money*" (Cordes, 2014).

Accordingly, different sizes of packaged produce are made available for different types of buyers, ranging from large bulk buyers to unit buyers. Market agents obtain produce from farmers or suppliers in large quantities and sell in customised sizes according to their customers' requirements. However, the packaging in the different sizes is done by producers (Cordes, 2014). The retail outlets buy in different quantities, depending on the type of fresh produce, and sell it in smaller units to walk-in customers.

Market agents were observed tailoring products by making the fresh produce available in good quality and varying sizes for the diverse group of buyers. Market agents tailored services by providing good customer service to each buyer and maintaining contact and communication with large bulk-buyers and regular customers.

Key elements of the value proposition noted to enable a market agent to be a leader among competitors in the fresh produce agency industry were quoted from one marketing agency with business experience of over 40 years in the Eastern Cape. These were:

> "*Committing to solve customers' needs was essential; delivering quality services, excellent products and complete customer satisfaction; having knowledgeable and skilled staff with a wide range of experience and expertise enabling them to master customers' needs; offering a wide variety of products in addition to quality and value to boost sales; making every effort to learn what customers want and to respond with the correct items*."

In addition, establishing strategic partnerships with suppliers offering top grade and best-known products had been disclosed by most agents to be ideal for providing customers with consistent and reliable quality products.

According to UNIVEG Fresh Produce Market Agent (2013), the most important element of their business model was customer intimacy, and their focus was on developing customer relationships beyond the simple trading into becoming a full service provider, offering customers value-added services, tailored to their specific needs, and consistently supplying them with high quality fresh produce.

5.6.1.2 Brand status of the product

Product branding seems to be less commonly used with fresh produce, compared with other food products (Kaufman, et al., 2000; Yanhong, et al., 2008).[11] According to Yanhong, et al., (2008), consumers have a lower willingness to pay for brands of fresh produce than in other categories, such as electronics, clothing, and packaged or tinned food. Cook (2011) added that the buying of fresh produce was driven by buyer interaction with the product rather than with its brand. The buyers basically buy produce according to its appearance (Cordes, 2014). Buyers pick up the produce, tap it, smell it, and look at it, and if it meets their purchasing criteria, they buy it. A similar conclusion is drawn for the buyers of fresh produce sampled in this study, i.e. the retail outlets, including street vendors. In essence, buyers of fresh produce have lower willingness to pay for brands than for quality observed through visual appeal. Thus, the brand name of fresh produce ranks as the least important attribute (Bond, et al., 2006).

Therefore, suppliers of fresh produce need to package good quality products well to maintain their brand status and market share. Branding of fresh produce has been observed to be mainly done in compliance with the regulatory legislation for food safety standards and traceability, than for product differentiation. This observation lifts an entry barrier for new entrants in the supply of fresh produce in competition well-established brands.

[11] Jin, H.Y., Zilberman, D., & Heiman, A., 2008. Choosing Brands: Fresh Produce versus other Products. American Journal of Agricultural Economics Association. 90(2). Pp. 463-475

5.6.1.3 Cost reduction strategies

Cost reduction was found to be a necessary condition for keeping up with competition in the market. Competition in the fresh produce market resulting from streamlined or integrated supply chains (Govindasamy and Thornsbury, 2006)[12] has driven market agents to adopt strategies of cost reduction which barely accommodate small-scale suppliers or producers. Small-scale suppliers or producers of fresh produce, unless they are efficient, do not stand a chance of gaining support from market agents. It is a cost reducing strategy for market agents in the fresh produce market to turn to more efficient and reliable suppliers (Olivella and Pastor, 2003). Cordes (2013) stated that producers decide what to send to the market in liaison with market agents, who then sell the produce to buyers. The supply of the fresh produce from the producer should be efficient and reliable for agents to receive constant support from their customers. This condition is threatened by the availability of low switching costs of agents by buyers on the market floor.

About 85 % of the sampled market agents mentioned that they source their produce mainly from medium- and large-scale producers. Only 15 % of the agents source their produce also from small-scale producers. It was further ascertained that agents will only buy from the larger-scale producers as a result of the strict competition on the market floor, and this then calls for a reliable supply of good quality products.

[12] Govindasamy, Ramu, & Thornsbury, Suzanne, 2006. Theme Overview: Fresh Produce Marketing: Critical trends and Issues. Choices Magazine, American Agricultural Economics Association - 4th Quarter 2006 – 21(4) pp. 225-228

5.6.2 Channels

The business or marketing channels analysis is important to identify how the agency communicates and how the agency values the communication and interaction with customers and suppliers. It also shows how the agency can reach its customers to deliver their value proposition. Osterwalder and Pigneur (2011) mentioned that channels are touch points that play an important role in the customer experience, as channels help raise awareness of the company's or organisation's products and services, help deliver and evaluate value propositions, and provide post-purchase customer support.

5.6.3 Key Resources

Key resources for market agents include physical resources and intellectual resources. Physical resources refer to the logistic infrastructure, information technology systems, distribution network systems, vehicles, and buildings. Intellectual resources refer to the things that we cannot put a price tag on, which include human capital such as expertise, knowledge and a firm's organisational learning ability (Brenner, 1999; Akpinar & Akdemir, 2000). It is the sum and synergy of a company's knowledge, experience, relationships, processes, discoveries, innovations, market presence and community influence (Bontis, 1996; Akpinar and Akdemir, 2000). It is also represented by the knowledge, skills, experience, intuition and attitudes of the workforce, which can be enhanced by increasing the capacity of each worker.

Key resources are important to the success of an agency. Both physical and intellectual resources were rated highly important by the market agents. If an agency lacks physical

resources and intellectual resources, it would not survive more than a day or two in the market owing to the prevailing competition.

5.7 Conclusion

The characteristics of fresh produce required to qualify fresh produce from black commercial farmers for sale on the FPM are quality, quantity, cleanliness (indicated by the washing of fresh produce), grading and packaging. The characteristics of cleanliness and degree of ripeness and bruising of the fresh produce contribute to the level of quality of the fresh produce. Markets agents in the FPM are more concerned with the quality and quantity of the fresh produce being delivered in the market. Retail outlets, on the other hand, are more interested in and consider the quality, cleanliness and grading of the fresh produce as being more essential in their business structures. In addition to meeting the requirements for fresh produce characteristics which render market agents competitive on the market floor, the suppliers of fresh produce are expected to abide with Regulation Act 69 for fresh produce in the country, and they must be reliable, punctual, and have appropriate transport.

Fresh produce sold in the national fresh produce markets anywhere in the country should meet the requirements of Regulation Act 69. The control and appropriate management of production standards and post-harvest handling, which include appropriate transportation with cold storage, are necessary for meeting the requirements of Regulation Act 69, thus producing and maintaining quality of fresh produce. A fresh produce supply chain with these features would compete fairly in the fresh produce market and should be successful. Black commercial farmers need to produce and supply good quality fresh produce in order for BEE market agents to be competitive in the market.

CHAPTER 6: MAPPING THE CHARACTERISTICS AND SERVICES OF MARKET AGENTS

6.1 Introduction

This chapter maps the characteristics and services of market agents in a fresh produce supply chain. It addresses the issues that agents need to consider as they play the intermediary role within the linkages of the chain. The linkages or contact points of the fresh produce agents in the supply chain require some form of management. This management is traced or mapped through the framework of services supply chain management, as discussed below.

6.2 Services Supply Chain for Fresh Produce

The need for services supply chain management comes about because of the competition within the fresh produce supply chain in the National Fresh Produce Markets. Market agents interact with suppliers, retail outlets and consumers in the market. They are constantly competing to maximise their revenue and to deliver effective and efficient products and services. According to Zailani and Kumar (2011), it is important to understand the concept of services supply chain management, as the prominence of the service sector in the market systems increases. The concept of service supply chain management was adopted from Ellram, et al. (2004) and it refers to the supply of services to any organisation, manufacturing, service or public sector (Voss, 2009; Zailani & Kumar, 2011). It is comprised of a network of suppliers, service providers (market agents), consumers and other supporting units (fresh produce markets and retail outlets) performing the function of transacting on and delivering produce to customers (Baltacioglu et al. 2007; Zailani & Kumar, 2011). The framework below (Figure 6.1) shows five forms of management within the supply chain. These forms of

management are reflected in three aspects of relationship management within the supply chain. The three aspects include supplier relationship management, internal supply chain relationship management (these comprise demand management, capacity and resources management, and service performance management), and customer relationship management (this also includes order-process management).

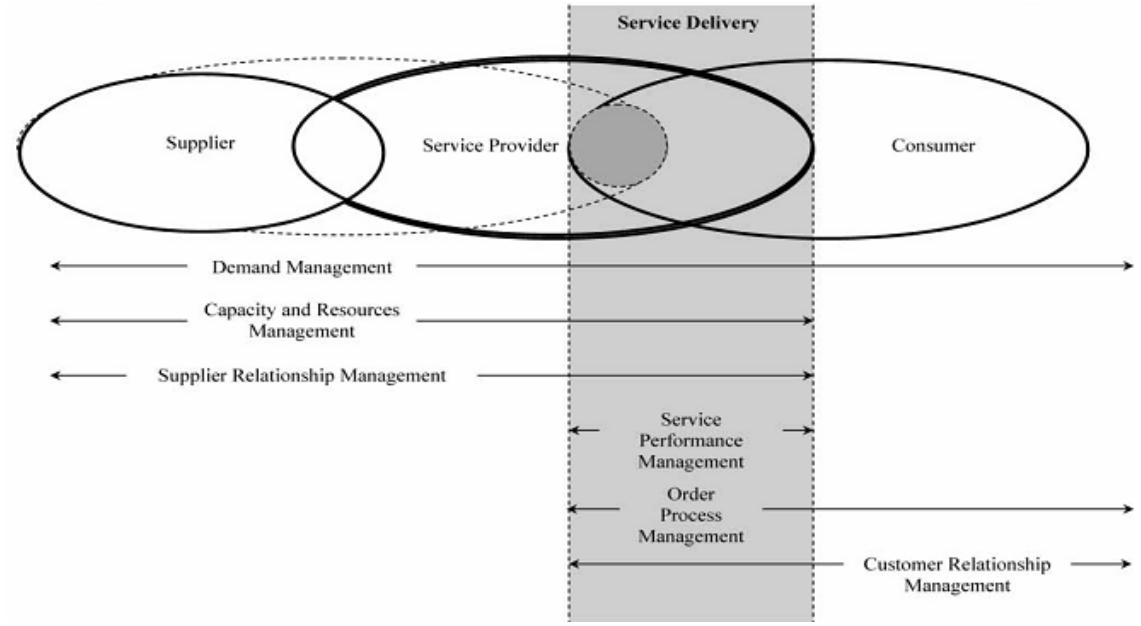


Figure 6.1: **Service Supply Chain Framework**

Source: Adapted from Sakhuja & Jain (2012).

6.2 Supplier Relationship Management (SRM)

Supplier relationship management is a comprehensive approach to strategically managing and planning for interactions with organisations and companies that supply goods and services. The management of the relationship with supplier companies helps to maximise the value of interactions, collaboration and it is a risk reduction strategy. It is an approach for building closer relationships with strategic suppliers in order to discover the features that could enhance the relationships while improving business performance for the agency (Poirier,

2003). Supplier relationship management goes together with the ability for selecting the right supplier with business attributes favouring competitiveness.

6.2.1 Case Study: ZZ2

ZZ2 is a farming corporation operating largely in Limpopo Province (Mooketsi, Politsi, Polokwane and Musina) which also owns farms in Southern Namibia, Ceres and Riebeek-Wes in the Western Cape and Langkloof in the Eastern Cape of South Africa. The company produces and supplies high quality fresh produce and it is the largest producer and supplier of tomatoes in the country and for the export market. It produces about 132 000 tonnes of tomatoes per annum, 4 000 tonnes of avocados per annum, and 12 000 tonnes of deciduous fruits per annum, together with livestock and game at a market value of R40 million.

The company produces high quality fresh produce on a large scale and supplies the national fresh produce markets at competitive prices. It grows fresh produce, and packs and distributes the produce using its own fleet of trucks to the market. It has pack-houses on its farms where fresh produce is washed, graded and sorted according to size, and then packed for distribution. The company supplies 50 % to 70 % of its fresh produce to the NFPMs within the country, 5 % to 10 % is sent to supermarkets, and about 20 % of its fresh produce is sold through its market stalls – ZZ2 markets.

Source: ZZ2 Business Report **www.zz2.biz**

According to the above case study, the supplier is large scale and well established. It supplies highly competitive produce to the market. The company provides its own transport, and has its own pack-houses for grading and packaging the fresh produce. In essence, it manages its

entire production chain owing to its scale and size. Market agents in the fresh produce market will not be over-shadowed by competition in the market if they distribute this supplier's products. Fresh produce that has gone through the production chain of this supplier company will appeal fair highly to customers. It is for this reason that a proper relationship with such types of suppliers need to be managed appropriately by market agents so as to be competitive on the market floor and to provide effective service. The market agents need to have the capacity and ability to manage the relationship with a supplier having the type of profile described above. In general, such suppliers are very concerned with protecting their reputation and always strive to be market leaders, thus they need to develop trust with an agent representing them on the market to the customers. The benefits to fresh produce market agents of a supplier relationship management with reliable and established suppliers are as listed below:

- It heightens the relationship with the supplier
- It creates competitive advantage for the agency
- It lengthens and strengthens supplier relationships
- It increases profits through reduced supply chain and operational costs, while maintaining quality.

Accordingly, market agents need to be strategic when selecting and managing their relationships with suppliers of fresh produce.

6.2.2 Selecting the Right Supplier

Selecting the right supplier and then managing the relationship with the supplier is a critical success factor for fresh produce market agents in the market. In selecting a supplier, the

model and attributes for suppliers which are mentioned in Table 6.1 below need to be considered by the market agents. The model presented in the table is used to segment supplier and market agents and develop their supplier base. It helps the market agent to move from basic suppliers to suppliers offering more value and those that have strategic importance for the agency's business operations (Poirier, 2003). The model basically helps establish the criteria for selecting a supplier and enables the agent to cope with a great number of suppliers.

Accordingly, BEE market agents handling the supply and distribution functions for fresh produce from black commercial farmers need to advocate such model to its suppliers (black commercial farmers). The ability of black commercial farmers to adapt to this model will enable the BEE agency to become efficient in the market.

Table 6.1: **Supplier Relationship Attribute Model**

Supplier Category/Focus	Basic	Value added	Preferred	Strategic
Relationship	Product or service as commodity	Impacts operational efficiency	Process expertise valued	Unique advantage is valued
Operational mode	Competitive Bid	Performance incentive	Continuous improvement	Flexible, agile, collaborative
Capability	Fulfil to requirements	Deploy specific competencies	Customised expertise & skills	Ability to assist with market changes/demands
Risk Management	Contract Penalties	Incentives and penalties	Incentives and information linkages	Process management, shared risk/reward
Planning Horizon	Current deal	Ongoing, near-term	Joint planning with end point	No end point, joint strategic planning
Nature of trust	Confident in ability to fulfil contract	Confident of execution performance	Confident in expertise; performance agility	Shared vision, ownership of intellectual capita
Metrics	Compliance tracking	Service level benchmarking	Best practice relationship	Business results; shared incentives
Customer Interaction	None to limited	Enabler of quality	Impacts individual customers	Impacts major number of customers

Source: Poirier (2003)

6.2.3 Supplier Evaluation Process

To evaluate suppliers, market agents were provided with a template with the measurement variables to rank their suppliers. The ranking process was conducted according to the perceptions or priorities of the agent as to which measurement element or variable listed comes first to him or her. The evaluation process was adapted from Poirier (2003). The

elements used in the supplier evaluation process are: quality, delivery, services, and environment.

Table 6.2: **Supplier Evaluation Process**

Ranking weight	Element	Measurement	A priori	Agent ranking
35 %	Quality	Quality performance	1	1
		Receiving inspection	2	4
		Reliability performance	3	2
		Line performance	4	3
30 %	Delivery	On-time commitment	1	1
		Standard interval performance	2	2
		On-time requested	3	4
		Delivery error performance	4	5
		Flexible and lead-time	5	3
25 %	Service	Product support	1	1
		Leading-edge procurement support	2	2
		Early design involvement capability	3	3
20 %	Environment	Regulatory compliance	1	1
		Environment policy	2	3
		Conservation program	3	3

Source: Adapted from Poirier (2003)

In ranking the elements, quality was given the highest ranking weight of 35 % and achieved the first position in the ranking order. It was followed by delivery in second position, service in third position, and environment in fourth position, with 30 %, 25 % and 20 %, respectively. These rankings indicate that quality is the top priority for the agency when selecting a

supplier of fresh produce. Quality is the top most important, according to the rankings of the identified elements listed above for evaluating the supplier selection process.

The rankings of the element measurements, as shown in the third column in the table above, are shown in the last column as ranked by the agent according to his or her perceptions and business operation of the agency. In measuring the quality element, quality performance was ranked position 1, followed by reliability performance in position 2, line performance position 3, and last position related to receiving inspection. According to the *a priori* expectations, quality was expected to be ranked in position 1, followed by receiving inspection, and then reliability performance at position 3, with the last position being line inspection. This *a priori* expectation in supplier value weighting process was in line with Poirier (2003). Quality performance had the highest weight of 30 %, followed by receiving inspection, reliability performance and line inspection, all at 20 %, and field retrofits at 10 % weighting.

For delivery measurement, on-time commitment was ranked position 1, standard interval performance was ranked position 2, flexibility and lead-time, on-time requested, and delivery error performance were ranked in positions 3, 4, 5, respectively. Product support, leading-edge procurement support, and early design involvement capability were ranked 1, 2, 3, respectively.

The environment element mainly concerns compliance with the requirements of the regulations and environmental policy, as well as existing conservation programmes. These factors do not affect the agent industry directly.

The observations from the above analysis show that the quality of fresh produce being supplied to the market for market agents to sell is essential. The supplier should be quality driven, i.e. the fresh produce being brought into the market should be of high quality standards to ensure the relatively good competitiveness of the produce and to attract more buyers. The features of quality seem to be attributed by good appearance of the fresh produce and longer shelf-life. Delivery, mainly on-time delivery, is also important in the evaluation of a supplier. If a supplier delivers good quality fresh produce and is always on time, then he or she is high likely to stand out and become the preferred supplier which all market agents would appreciate working with.

Definition of measurement terms used in the supplier evaluation process:

- Quality performance – refers to quality driven, i.e. the supplier is driven by achieving quality in the products which he or she supplies to the market.
- Receiving inspection – refers to the importance and requirements of inspecting the quality of products being received.
- Reliability performance – refers to the reliability of quality in the supplied products.
- Line performance – refers to the measurement of the fulfilment of the supply chain delivery reliability from the supplier to the agency.
- On-time commitment – refers to a supplier's ability to deliver on time and that it is committed to the times and dates.
- On-time requested – means that the supplier delivers only after being requested to do so.
- Standard interval process – means that the delivery is regularly and the supplier always delivers.

- Flexibility and lead-time – means that delivery is made on specific orders at certain dates.
- Product support – refers to the service provided in collecting or up-lifting of products from the supplier.
- Leading-edge procurement support – means that the supplier has a reliable distribution network.
- Early design involvement capability – refers to a service whereby a supplier involves the agent in the customisation of products during packaging.
- Environment Policy – refers to issues pertaining to environmental policy and whether the policy is being realised or considered.
- Regulatory compliance – refers to whether the supplier complies with the regulations on the environment.
- Conservation programme – refers to whether the supplier has a programme in place that addresses environmental issues.

6.3 Internal Supply Chain Management

According to Basnet and Wisner (2012), internal supply chain management relates to a chain of value-creating activities or functions within a company that complete with providing a product or service to the customer. The incorporation of these functions encompasses a holistic performance of activities across departmental boundaries. It is further argued that a well-integrated internal supply chain should result in higher levels of customer service and other company performance metrics (Basnet & Wisner, 2012).

A number of researchers, according to Basnet and Wisner (2012), have used numerous expressions to define the concept of supply chain integration, the construct of internal supply chain, such as communication, interaction, coordination, collaboration, harmony, adherence to the "integrated logistics" concept, cooperation, interfacing, and consultation.

6.3.1 Case Study: RSA market agents

Its founder, Michael Louftie, established RSA Market Agents in August 1984, and it started operations on the JFPM. The success of RSA Market Agents is based on its vision and mission statement, which was regarded as the foundation of the agency business. The vision and mission statement was referred to as the agency's living document and is to be applied at all times. The vision and mission statement of RSA Market Agents is as follows RSA Market Agents (2011):

> *Vision – To maintain a position of leadership within the fresh produce industry.*
>
> *Mission – To offer a professional sales service to marketers of fresh produce by embracing the following values:*
>
> *Integrity – A commitment to truth, honesty and trust.*
>
> *Respect for the Individual – The basis of all the behaviour. To practice this principle with sincerity and faithfulness*
>
> *Loyalty – To be loyal to all supporters and to the values and principles*
>
> *Communication – The channels of communication will always be open and honest.*

Responsibility – Answerable for all the actions and committed to serving the needs of the principals and the customers

Quality – The service will be of the highest standard, and to ensure that the latest technology is incorporated.

Planning and Preparation – This will ensure the ability to meet all commitments each day.

Leadership – To contribute pro-actively to the total fresh produce marketing system

The success of the RSA Market Agents has also relied on the skills of salespersons and the support of their farmers. The success pillars of the agency re that its personnel undertook training on a continuous basis. This training improved the knowledge base and skills. The agency was able to adapt to the competition posed by chain stores and large supermarkets, which moved away from the market to source their produce directly from the farmers, by focusing on the needs of informal traders, wholesalers and independent greengrocers.

The RSA Market Agents have expanded its business and it now has operations in the Johannesburg, Durban, Bloemfontein, and Tshwane Fresh Produce Markets. It has built a reputation for integrity and reliability to farmers supplying the agent. It has won trust from farmers. Generally, trust in the fresh produce business does not come easily. It has to be earned, as farmers tend to be conservative business people who demand the best. To sustain growth and development, the agency took a strategic decision to include a Black Economic Empowerment Policy and to sell a 31 % stake in its business to partners of their choice (RSA

Market Agents, 2011). Thus, large numbers of fresh produce suppliers send their produce to RSA Market Agents.

6.4 Customer Relationship Management (CRM)

Customer (seller and buyer) relationship management forms part of the mapping strategy of the fresh produce supply chain for market agents because it draws focus on the interface between the agency and its customers. It refers to a relationship that is linked through a set of connectors, such as information exchange, operational linkages, and legal bonds (Cannon and Perrault, 1999; Clements, et al., 2008).

The information exchange connector, as stated by Cannon and Perrault (1999) in Clements, et al. (2008), suggests that information that is useful to both buyers and sellers should be shared openly, and both parties should be connected through this flow of necessary information. The interaction through this connector strengthens the relationship between the agents and buyers of fresh produce in the market. The agents devote significant amounts of energy to draw the attention of buyers in the market to their selling stands and platforms. The information exchange connector, together with the operational linkage connector, requires capabilities of an agent to exercise his or her interaction skills and relationship management while in a competitive environment.

The operational linkages connector connects parties through the systems, procedures and routines that have been developed by both parties to facilitate the necessary linkages between their operations (Clements, et al., 2008). In the national fresh produce marketing industry, the

legal bonds linkage is enforced for all non-complying agents through the APAC. The legal bonds, according to Clement, et al. (2008), link different parties, i.e. the market agents, the fresh produce markets, and the retail outlets, through mandatory contractual agreements that specify the responsibilities and roles of all parties (Clements, et al., 2008).

The analysis of the supplier relationship, the internal relationship and the buyer-seller relationship helps to map a successful supply chain for fresh produce. It enables the establishment of a point of entry, or approach, for an emerging market agent to the fresh produce markets. It highlights the issues to be considered when managing a fresh produce market agent in a hostile or competitive business environment.

6.5 Conclusion

The fresh produce supply chain for market agents involves interacting with suppliers, the personnel within the agency, and the customers or buyers of fresh produce. The interactions within the links of the chain, and the management of the entire chain, have to accommodate impacts and influences from the external macro- and micro-economic environment. Managing a sustainable supply base is important for the success of the supply chain. A reliable supplier base guarantees a comparative advantage for the market agent against the competition in the market.

Adequate skills and knowledge of the fresh produce industry are necessary for the management of the internal activities of a market agent in the supply chain. All operations of the activities within the market agency in the chain should be handled professionally and the

quality of services should be of high standard. It is also found to be necessary to have strong linkages and connections with customers and buyers of fresh produce at the ultimate end of the supply chain.

The fresh produce being brought into the market should be of high quality. Therefore, suppliers should be quality driven in order to attract more agents and buyers. The quality of fresh produce is influenced by the services provided by the supplier, which should impact positively on the appearance of the fresh produce and on longer shelf life. On-time delivery is also important in the fresh produce industry. Suppliers need to comply with being punctual and being on time. If a supplier delivers good quality fresh produce and is always on time, then he or she is high likely to stand out and become a preferred supplier which all market agents would appreciate working with. Market agents should also have strong linkages and connections with customers and buyers of fresh produce at the immediate end of the supply chain.

CHAPTER 7: CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

A fresh produce supply chain for BEE market agents in the NFPM presents a potential for making business opportunities available to a larger population sector of the black South African community. The business opportunity involves the development of a market agency that will reach out to black commercial farmers, often referred to as small-scale farmers, to sell their fresh produce on the National Fresh Produce Markets. Black commercial farmers in South Africa are mostly left behind in the production and distribution of fresh produce in more sophisticated and developed supply chains or economic marketing systems. The economy of South Africa is such that a small number of relatively large, established commercial producers exist alongside a multitude of fragmented, small-scale producers in the produce fresh produce industry. Thus, black commercial farmers have only a small market share in the formal fresh produce chain.

Market agents play the role between suppliers or producers and retail outlets in distributing the fresh produce in the fresh produce markets. However, the role of NFPMs is declining in the distribution of fresh produce owing to the emergence of large chain supermarkets and hypermarkets. These have threatened the market share of the NFPMs and this has subsequently sparked competition among market agents on the fresh produce market floor. The competition has furthermore reduced the possibility for produce from black commercial farmers becoming competitive in the market. This means that black commercial farmers must produce only good quality and competitive fresh produce in order to be able to enter the fresh produce supply chain through market agents in the NFPM. In establishing this possibility, the factors and conditions for establishing a competitive supply chain model for produce from

black commercial farmers in the fresh produce market were tested against market agents and retail outlets.

A descriptive statistical analysis and an ordinal logistic regression were used to test and identify the factors which qualify small-scale farmers' fresh produce for acceptance in the structures of produce markets and retail outlets, and for the establishment of a competitive market agency in the produce market. This analysis was done in conjunction with a situational and risk analysis to determine the necessary conditions for the enabling environment of a fresh produce supply chain. A mapping procedure was also adopted to map the services and elements of a fresh produce supply chain.

The literature reviewed in the study examined the marketing channels of fresh produce in other areas of the world and how they impact on small-scale farmers. It examined the characteristics required to graduate small-scale farmers to integrated supply chain. The literature also looked at the importance of coordination within the chain. It highlighted the challenges of fresh produce as it moves across the supply chain and the two-way flow of information. The coordination in the chain explains the importance for market agents undertaking the distribution and marketing function within the supply chain. It signifies the need for an effective distribution and marketing function taking into account the perishability of fresh produce. The fresh produce needs to pass across the chain from producers, through fresh produce markets and retail outlets, to consumers within a short period of time. The produce of small-scale farmers in the global supply chain is dwindling in quantity and participation, owing to stringent, premium quality standards requirements in the international markets. In essence, the literature described the importance of coordinated and integrated

marketing systems for fresh produce as found in other countries in the world and related the relevancy to marketing systems for fresh produce in South Africa.

The literature review also showed that quality is the mainstay everywhere for retaining markets in the fresh produce industry. The challenges in meeting quality requirements have resulted in small-scale farmers settling for traditional supply chains using spot markets to sell their produce directly to consumers. The quality standards for fresh produce of small-scale farmers, as found literature, are clear as to the need for immediate inspection by sight, feel, smell and taste. The conclusion drawn is that small-scale farmers are able to produce relatively acceptable quality standards of fresh produce. However, they cannot economically maintain the produce after harvest, thus the high rate of post-harvest losses. It is, therefore, not economically feasible in their situation to maintain and sustain the logistics of reliable supply chains, competitive value propositions, high standards at low costs, and reliable supplies. This is because of the dis-economies of scale experienced by small-scale farmers.

The findings of the study are in line with what has been disclosed in the literature with regard to the attributes of a fresh produce supply chain. The study modelled the factors and conditions necessary for the establishment of a competitive BEE market agency and a supply chain model for small-scale farmers' produce through the National Fresh Produce Markets. The factors modelled throughout the chain were: importance of quality, quantity, washing, sorting, grading, packaging, and labelling of fresh produce.

The characteristics for fresh produce required to qualify black commercial farmers' fresh produce for acceptance at the FPMs are quality, quantity, cleanliness (washing of fresh

produce), grading and packaging. The characteristics of cleanliness and the degree of ripeness and bruising of the fresh produce contribute to the level of quality of the fresh produce. Markets agents in the FPMs are more concerned about the quality and quantity of the fresh produce being delivered to the market. Retail outlets, on the other hand, are also more interested in and consider the quality, cleanliness and grading of the fresh produce more essential in their business structures. In addition to meeting the fresh produce characteristics needed to render market agents competitive on the market floor, the suppliers of fresh produce are expected to abide with Regulation Act 69 for fresh produce in the country, and should be reliable, punctual, and have appropriate transport.

The fresh produce supply chain for market agents involves interaction with suppliers, its personnel within the agency, and the customers or buyers of fresh produce. The interactions within the links of the chain, and the management of the entire chain, have to accommodate impacts and influences from the external macro- and micro-economic environment. Managing a sustainable supply base is important for the success of the supply chain. A reliable supplier base guarantees a comparative advantage for the market agent against the competition in the market.

Adequate skills and knowledge of the fresh produce industry are necessary for the management of the internal activities of a market agent in the supply chain. All operations of the activities within the market agency in the chain should be handled professionally and the quality of services should be of high standard. On-time delivery is also important in the fresh produce industry.

7.3 Recommendations

According to the analysis of the macro- and micro-economic environments of the fresh produce supply chain in South Africa, it is recommended that a study should be undertaken to analyse the effectiveness of government policies aimed at empowering small-scale farmers/black commercial farmers. There is a need to analyse the effectiveness of the implementation of government monitoring and evaluation frameworks regarding policies enabling and empowering small-scale farmers.

There is need for the flow of information across the fresh produce supply chain for BEE market agents. BEE market agents should interpret information concerning market requirements and the economic environment to the farmers. The BEE market agents and the black commercial farmers require up-to-date information on the economic (micro/macro) environment to adequately position their business operations and processes.

The BEE market agents need to establish a specific market niche for fresh produce from black commercial farmers. The fresh produce markets should support the marketing and promotion of black commercial farmers' fresh produce in order to establish a market segment for these farmers. The growing middle class and the lower-income population group in the townships present a good opportunity for a target market niche for BEE market agents.

Small-scale farmers are likely to produce acceptable and consistent quality of fresh produce meeting the basic requirements of Regulation Act 69 for Fresh Produce, if the major challenges currently being faced are addressed. The major challenge faced by the small-scale

farmers is that they do not have the capacity to control and mitigate the risks against post-harvest losses. The study recommends that different small-scale farmers, within a specific area, pool their produce in one location so as to share the costs of value adding and processing. It recommends that the BEE market agents assume the coordination function on behalf of the small-scale farmers to source and pool their produce in a central position. The agents should undertake the transporting and marketing functions, while the farmers focus their efforts and resources on production. These points highlight the need to establish a fresh produce depot for value adding and processing, i.e. grading, sorting, packaging, and labelling, and to provide cold storage. The fresh produce depot should be equipped with appropriate and affordable technology which will reduce post-harvest losses, and reduce the handling time of the fresh produce.

The fresh produce markets can also take the initiative to facilitate the cooperation of small-scale through their training programmes. This can simplify the responsibilities of the BEE market agents in ensuring that the black commercial farmers pool their produce in a central location for value adding activities.

The BEE market agents should ensure that the fresh produce sourced from black commercial farmers is in good and acceptable quality, quantity, that it is packaged, clean and graded. The fresh produce market should not compromise the nationally-accepted quality standards for fresh produce to be sold within the country.

In the determination of the factors and conditions required for market agents to sell fresh produce from black commercial farmers, the study recommends that BEE market agents

should strategically assess the farmers. The BEE market agents should provide an allowance to nurture and grow competent black commercial farmers that meet the basic requirements. They should assist the farmers to overcome the barriers currently hindering their growth and development.

The BEE market agents should understand the market requirements of its customers and for the target market group. This will enable them to align the sourcing of fresh produce with the needs and requirements of the market. This includes tailoring the fresh produce and services according to the needs of the market and buyers.

The BEE market agent should be committed to delivering quality services and excellent products. The agent should maintain good communication channels across the chain, including communication with producers and suppliers, and with buyers and customers.

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APPENDICES

Appendix 1: Questionnaire for Retail Outlets

Questionnaire for Retail Outlets

Part 1 – Demographic information

1. Name of retail outlet: (please tick next to the number and provide name if applicable)

1	Supermarket	
2	Food retailer/Restaurant	
3	Green grocer/café	
4	Hawker/vendor	
5	Government institution	
6	Processor	

2. Location/physical address:_____
_____

3. Years of experience in the retail industry:
_____

Part 2 – Sourcing of fresh produce

Question with asterisk (*) skip if do not source from small-scale.

1. Where do you currently source your fresh produce?

Fresh produce market	1
Large scale farmers	2
Small-scale farmers	3
Fresh produce market	4

2. What is the approximate average quantity of fresh produce sourced per interval of stocking?

Less than 50 kg	1
50 – 100 kg	2
100 – 500 kg	3
500 – 100 kg	4
Above (1 000 kg) 1 ton	5

3. From the following different type of fresh produce, please rate how much you stock.

(rating scores 1 – 5) – leave blank if not applicable.

Rate order: 1 = very little quantity
2 = less than average
3 = average
4 = more than average
5 = very big quantity

Type of Crop	**Rate(1 – 5)**	**Type of Crop**	**Rate (1 – 5)**
Potatoes		Beetroot	
Sweet potatoes		Cauliflower	
Tomatoes		Carrot	
Cucumber		Green beans	
Onion		Spinach	
Spring onion		Lettuce	
Broccoli		Chilli	
Cabbages		Pepper	
Pumpkins		Egg plant	
Green peas		Sweet corn	

4. To what degree would you support small-scale farmers by buying or stocking their fresh produce? Tick the number that is applicable to your answer.

Do not buy from small-scale farmers at all	1
Minimum support	2

Average support – depends on ability to meet minimum supply requirement	3
High support – would support as long as they can provide quality produce and supply reliably	4
Always – only stock small-scale farmers fresh produce	5

*5. Using a rating (scoring) procedure of 1 – 5 (very bad to very good), rate the significance of the following factors or challenges experienced when sourcing from small-scale farmers.

Accessibility to small-scale farmers' farms	
Distance	
Road quality	
Reliability of production and availability of produce	
Quality of produce	
Quantity	
Pricing of fresh produce by small-scale farmers at farm-gate	

Please provide comments with regard to the above factors and challenges, (if any).

_____
_____
_____
_____

*6. Availability of a middleman can help to eliminate some of the above mentioned challenges. The fresh produce market through the market agents helps remove these challenges.

a) Can you source small-scale farmers' fresh produce through the produce market?

Yes	1
No	2

b) Please explain the choice of your answer above:

_____
_____

7. Rate the importance of the following value-add services for the requirement of quality standards of small-scale farmers' fresh produce. Rating or scoring order is 1 – 5 (very low to very high).

Packaging	
Washing	
Sorting	
Grading	
Labelling	

8. Rate the importance and severity of the following requirement for suppliers. Rating or scoring order is 1 – 5 (low to high).

Punctuality with time for supply	
Consistence of supply	
Reliability of supply	
Appropriate quantity of supply	
Appropriate quality	

9. Rate your leniency with regard to the following condition of supplied or stocked fresh produce. Rating or scoring order is 1 – 5 (none to high)

	Minimum (1 – 5)	Medium (1 – 5)	High (1 – 5)
Ripeness			
Damaged or crushed			
Spoiled			

Appendix 2: Questionnaire for Fresh Produce Market Agents

Questionnaire for Fresh Produce Market Agents

Online survey: www.surveymonkey.com/s/FreshProduceMarketAgents

Part 1: Demographic Information

1. Name of agency:
……
2. Name of Province where it is operating:
……
3. Name of Fresh Produce Market where it is operating:
……
4. Number of years of experience in the business:
……
5. Contact number:
……

Part 2: Business Model Strategy and Process

1. According to Regulation Act 69 relating to the grading, packing and marking of fresh vegetables intended for sale in the country, South Africa;

   a. Which class of fresh vegetables would you consider most in order for the fresh produce to sell in the market?

Class 1	
Class 2	
Class 3	
Lowest class	

   b. Which class would you consider least?

Class 1	
Class 2	
Class 3	

Lowest class	

Please note: Class 1, 2&3 are classified classes and the lowest class is unclassified. Both classified and unclassified classes should be fresh produce that are fit for human consumption.

2. Rate the importance of the following value-add propositions.
   (1 – 5: less important – more important)

a.	Customisation: Tailoring products and services to the specific needs of individual customer or customers. e.g. having different packaging sizes	
b.	Brand status of the product	
c.	Cost reduction strategies	
d.	Risk reduction	
e.	Pricing	

3. Rate your agency according to the following conditions in liaising between producers and customers. (1 – 5: less important – more important)

a.	Raising awareness and promoting the efficiency and effectiveness in delivering services to customers (marketing the agency)	
b.	Helping customers or clients to evaluate the agency's value proposition (services)	
c.	Enhancing or allowing customers to purchase specific products	
d.	Delivering value proposition to customers	

4. Rate the agency according to the following value proposition services.
   (1 – 5: less important – more important)

a.	Personal assistance: communicating with customers	
b.	Dedicating personal assistance to individual client or important customer	
c.	Use of sophisticated technology such as information technology, internet, on-line services, etc.	
d.	Maintaining your client base – both your suppliers and customers	

5. Rate the importance of the following key resources for the agency.
   (1 – 5: less important – more important)

a.	Physical resources: logistic infrastructure, IT, distribution network systems, vehicles, buildings	
b.	Intellectual resources: brands, proprietary knowledge, patents and copyrights	
c.	Human resources: human knowledge or human capital	

Part 3: Market Agency Development and Management

1. Does the agency have plans to expand?

1.	Yes
2.	No

Give explanation to the choice of your answer above:

_____
_____
_____

2. Have the agency experienced any growth in the past years?

1.	Yes
2.	No

Please state which fresh produce you experienced the growth and if it was a positive or negative growth.

Fresh produce	**Growth (circle your option)**
	Positive Negative
	Positive Negative
	Positive Negative
	Positive Negative
	Positive Negative

3. How has the composition of your supply chain changed during the past 10 years?
1 = no increase, 2 = least increase, 3 = proportionate increase, 4 = slightly above normal, 5 = exceptional increase

Supply base	
Demand or customer base	
Legislation	
Market size	
Competition	

4. Who are the main suppliers of the agency?

1.	Large scale farmers	
2.	Medium scale farmers	
3.	Small scale farmers	

5. What are the risks incurred mostly when running the agency and how can they be managed? Risks of produce going bad, selling less stock, etc.

_____
_____
_____
_____
_____

6. Using a rating scale of 1 – 5 (least important to most important), rate how you perceive the following entry barriers for new entrants in the market.

Barriers to entry	**Rate (1 – 5)**
Economies of scale:	
Product differentiation	
Capital requirements	
Switching costs	
Access to distribution channels	
Cost disadvantages independent of scale	

7. Would you mentor/ support a new entrant? How would other agents in the market perceive them?

_____
_____
_____

8. a. How will agents adapt to new health and safety regulations?

_____
_____
_____
_____

b. What do you think of the future of the fresh produce market in terms of growth and development?

_____
_____
_____
_____

9. What type of relationships do agents have with the Fresh Produce Market?

_____
_____
_____
_____

Part 4: Evaluation of the suppliers of fresh produce in the market

Element	Measurement	Rank
Quality	Quality performance	
	Receiving inspection	
	Reliability performance	
	Line performance	
Delivery	On-time commitment	
	Standard interval performance	
	On-time requested	
	Delivery error performance	
	Flexible and lead-time	
Service	Product support	
	Leading-edge procurement support	
	Early design involvement capability	
Environment	Regulatory compliance	
	Environment policy	

	Conservation program	

Appendix 3: Questionnaire for Market Agents in Tshwane Fresh Produce Market

Questionnaire for Market Agents in Tshwane Fresh Produce Market

Online survey

https://www.surveymonkey.com/s/FreshProduceMarketAgents8TshwaneMarket

1. Fresh produce farmers supply their produce to the market for agents to sell.
   a. Does your agency have specific supplier/s of fresh produce?
      - ○ Yes
      - ○ No
   b. Does your agency have prior arrangements with the supplier before bringing produce to the market?
      - ○ Yes
      - ○ No
   c. Is the supplier large scale farmer, medium scale farmer or small scale farmer?
      - ○ Large scale farmer
      - ○ Smallholder farmer
   d. Using a rating scale of 1 – 5 (less important to more important), please rate the importance of the following requirements of your agency for the characteristics of fresh produce from your suppliers.

a.	Product quality	
b.	Product quantity	
c.	Reliability of a supplier	

ppl

   e. How does your agency decide on the quantity of fresh produce to sell? Does the decision depend on the demand by customers, supply by farmers, or availability of space?
      - ○ Demand driven
      - ○ Supply driven
      - ○ Availability of space on the market space
   f. Which type of fresh produce sell most in the market?

_____

_____

_____

_____

g. Who are the main buyers or customers of your agency?

- ○ Hawkers/Vendors
- ○ Green grocer shops
- ○ Walk-in customers
- ○ Other (specify)

  _____

h. Does your agency have prior arrangement with the buyer/customers before coming to buy? Does the agency have specific customers it is supplying?

- ○ Yes
- ○ No
- ○ (Yes) Depends on the type of customer dealing with

2. Rate the importance of the following value-add propositions.
(1 – 5: less important – more important)

a.	Customisation: Tailoring products and services to the specific needs of individual customer or customers. e.g. having different packaging sizes	
b.	Brand status of the product	
c.	Cost reduction strategies	
d.	Risk reduction	
e.	Pricing	
f.	Maintaining your client base – both your suppliers and customers	
g.	Dedicating personal assistance to individual client or important customer	
h.	Use of sophisticated technology such as information technology, internet, on-line services, etc.	

3. Rate your agency according to the following conditions in liaising between producers and customers. (1 – 5: less important – more important)

a.	Raising awareness and promoting the efficiency and effectiveness in delivering services to customers (marketing the agency)	
b.	Helping customers or clients to evaluate the agency's value proposition (services)	
c.	Enhancing or allowing customers to purchase specific products	
d.	Delivering value proposition to customers	

4. Rate the importance of the following key resources for the agency.
(1 – 5: less important – more important)

a.	Physical resources: logistic infrastructure, IT, distribution network systems, vehicles, buildings	
b.	Intellectual resources: brands, proprietary knowledge, patents and copyrights	
c.	Human resources: human knowledge or human capital	

5. What are the main challenges associated with running the agency;
   a. Possibility of stocking more and selling less:
      How do you prevent it? If it happens, how do you deal with the supplier/producer?

      _____
      _____
      _____
      _____
      _____
      _____

   b. Possibility of having less supply from producers:
      How do you manage such situation with your customers and to keep the agency operating?

      _____
      _____
      _____
      _____
      _____
      _____

   c. Possibility of fresh produce going bad while it is still in the market:
      How do you manage the situation?

      _____
      _____
      _____
      _____
      _____

   d. Dispute or misunderstanding with the producer:
      What form of agreement do you have with the producer? How is the level of trust determined between the agency and the supplier, who is more at risk?

      _____
      _____
      _____
      _____
      _____
      _____

e. Any other risks likely to be encountered by the market agents:

_____
_____
_____
_____
_____
_____