FACTORS THAT INFLUENCE CONSUMER WILLINGNESS TO BUY SELECTED PROCESSED VEGETABLES AND MARKET PENETRATION STRATEGIES USED BY EMERGING PROCESSORS A CASE OF UNIVERSITY OF FORT HARE LED-LLIMA AGRIPARKS PROGRAMME, IN THE AMATHOLE DISTRICT, SOUTH AFRICA.

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A Dissertation Submitted in Fulfilment of the Requirement for the Degree of Master of Science in Agriculture (Agricultural Economics)

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Declaration

I, the undersigned, hereby certify that, this study is the result of my original work and that to the best of my knowledge and belief, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any degree or diploma of the University of Fort Hare or any other institution of higher learning, except where due acknowledgement has been made in the text.

Mugande ..... 28/04/2015 .....

Signature Date

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Abstract

Small scale vegetable farmers in developing countries face enormous challenges in trying to access markets for their produce. This is very problematic considering that the only way of getting incomes to sustain livelihoods for small scale farmers can be through access to markets in which they can sell their produce. It is in this view that this study seeks to find out factors that influence consumers' decision making to buy certain vegetables and to determine whether there is a potential market for the processed vegetables. This study does so through evaluating consumer perceptions about buying different vegetables and determining significant factors that influence their preferences. The study used a vegetable tasting procedure in which vegetables were prepared and presented to 50 respondents for evaluation with respect to various attributes in order to find out which attributes could affect consumer decisions. In addition to this, a survey was conducted on 200 individuals, 10 schools and 10 supermarkets in order to determine if there is a potential for processed vegetables in these markets. A binary logistic regression model was also used to determine significant factors that influence individuals' willingness to buy processed vegetables. Primary data used in the study was obtained from respondents through the use of closed and open ended questionnaires (with general and rating questions). Samples for the study were drawn using convenience sampling and purposive sampling. Data was analysed using descriptive statistics and binary logistic regression model. The results of the study established that consumers' perceptions and preferences are influenced by various factors such as quality, taste, colour, freshness of vegetables and other socio-economic factors such as the economic situation and level of education of the individual or household. The results also showed that there are significant factors that influence willingness of consumers to buy processed vegetables and these include own production, home preservation of vegetables, personality, environment, quality of produce and attitudes towards the vegetables.

Table of Contents

List of Figures

List of Tables

CHAPTER 1: INTRODUCTION

1. 1 Background of study

Today's society is characterised by an ever increasing awareness in health and interest in the role of food for maintaining and improving human well-being and consumer health (Ragaert *et al.*, 2004). This in turn has resulted in an increased interest in the types of foods that have the ability to increase people's well being and health. It is in this regard that vegetables have been fully acknowledged for their benefits towards healthy living (Ragaert *et al.*, 2004). Ragaert *et al.*, (2004) have suggested that a regular consumption of vegetables could help prevent cardiovascular diseases and certain cancers, principally of the digestive system. As such, it would be plausible to recommend that people should get at least 400g of vegetables per day (Ragaert *et al.*, 2004).

Despite the possible health benefits vegetables have in human lives, vegetable consumption remains below the recommended daily intake in many countries due to barriers such as complacency and lack of willpower to change the diet (Ragaert *et al.*, 2004). Furthermore, Cox *et al.,* (1998) observed that even among highly motivated consumers, constraints can emerge related to the availability, perceptions and lack of time (Cox *et al.*, 1998). Lack of income is critical particularly for lower income groups as it acts as a major constraint to the consumption of the recommended vegetable daily intake since vegetables are more expensive as compared to basic foods such as rice and mealie-meal (Cox *et al.*, 1998).

Whereas the recommended daily intake of vegetables amongst low income households is highly restricted by income shortages, within the richer part of the society, barriers relate to changes in the consumer's social environment (Frewer *et al.*, 2001). For example, more women are working outside the home a development which affords them less time for cooking, thus prioritising leisure instead of cooking and in the process increasing out-of-home food consumption (To make matters worse, only few people consider eating enough vegetables (that is if they eat vegetables at all) when they eat out. Instead, many concentrate on eating junk foods. Whilst this is the case, it should be noted that consumption of vegetables below average can have serious consequences such as higher mortality rates and obesity (Frewer *et al.*, 2001). Therefore, there is a need to always remind people of the importance of eating vegetables regularly through awareness campaigns (Ragaert *et al.*, 2004). This can be done by marketers themselves as a way of increasing sales through persuading consumers to buy vegetables (Ragaert *et al.*, 2004). Marketers also need to seek understanding of what influences consumers' decisions to buy vegetables.

According to Peneau *et al.*, (2006) and Saleki, and Seyedsaleki (2012) observation of consumer expectations on food quality presents the base for any successful food production and marketing. This is also true for fruits and vegetables, which are increasingly being valued as an important part of the diet (Peneau *et al.*, 2006). Observing consumer expectations can help producers understand various attributes that influence customers' decisions to purchase vegetables and thereby helping them to produce products which satisfy consumer needs and hence be successful in their marketing.

There are various vegetable attributes that influence consumers during decision making on whether or not to buy certain vegetable types and these include vegetable attributes such as quality, taste, uniqueness, nutrition and healthy, colour, freshness and appearance (FAO, 2004a). In addition to vegetable attributes, there are socio-economic factors that can influence customers' decisions when buying vegetables and these may include age, marital status, level of education and economic status of a household. It should however be noted that likes and preferences of consumers cannot be perfectly defined since they may differ from person to person, country to country and from region to region (FAO, 2004a).

For example, in developed countriesthe primary factors that influence vegetable choices were found to be quality, freshness, taste, healthy diet, price, family preferences and habits (Peneau *et al.*, 2006). Another study by conducted by Ragaert *et al.*, (2004) in Ghana established that freshness and taste were the most decisive attributes for choice of fruit and vegetables. Further, Ragaert *et al.*, (2004) observed that freshness of vegetables was one of the significant reasons for selecting a primary supermarket. This implies that people chose supermarkets based on the freshness of vegetables they sold. Inturn, this observation is indicative of the fact that marketers should strive to produce average products that cater for all customer needs or alternatively produce different products for different market segments. Therefore, due to different likes and preferences of consumers, marketers should first do market research in order to understand the characteristics of the market they intend to serve. One way of doing this can be through evaluating consumer attitudes towards various product attributes.

According to Moser *et al.*, (2011) there have been efforts to understand consumer attitudes, overall buying behaviour and the relative importance of attributes such as quality and price in purchasing food. However, there are still gaps regarding knowledge about consumer perceptions as influenced by various product attributes and factors that influence consumer decisions to buy certain products (Davis, 2006). Whilst this is the case, as was observed by

Combris *et al.*, (2009) and Saleki, and Seyedsaleki (2012), understanding consumer perceptions, attitudes and factors that influence their decision making still remains important. This is because it helps marketers to investigate trade-offs between several competing product attributes and to determine the relative importance of various attributes in consumers' choice process. For instance according to Saleki, and Seyedsaleki (2012), there have been increased concern over the health health and safety of agricultural products and as such these has been driving forces behind consumer choices. This therefore means that producers have to strive to produce products which meet such consumer demands. In addition to that, Starks and Bukenya (2008) have indicated that there has been some notable increases in consumers' demand for high quality produce. This serves as reason why value-addition has become an important aspect in the marketing of agricultural products. This shows that for one to be successful in marketing, one has to explore the target market first and gain understanding on the attitudes, choices, preferences and factors that influence the choices for different products in that market (Starks and Bukenya 2008).

In line with the literature by Starks and Bukenya (2008) and Hellin *et al.*, (2009) have also revealed why there has been growing interest in value addition to agricultural products. Hellin *et al.*, (2009) have established that growing interest in value added activities is a result of the ever-changing global agricultural economy, which sees declining commodity prices and producers increasingly supplying complex value chains. Value addition has been seen as one way through which emerging processors can benefit from these emerging market opportunities. Therefore, farmers are encouraged to produce high value crops and engage in value-adding activities such as agro-processing (Hellin *et al.*, 2009). A complementary activity that can be done by farmers is to form farmer organizations and collective action so as to enhance their access to markets (DAFF, 2102). Thus, working together as a team helps farmers to have a better capital base unlike when they work as individuals. This therefore helps them when it comes to marketing research since it requires a lot of funds and human power to do.

Whilst there may be differences in consumer preferences and factors that influence their choices and attitudes FAO (2004a), mentioned that there are universal consumer behaviour patterns across the world. Therefore, for the purposes of this study, the focus will be on those characteristics and demands that are common worldwide, which may be useful for understanding an average consumer. These will include product (vegetable) characteristics such as quality, freshness, appearance, uniqueness, taste, colour, price, packaging, health and nutrition, texture and origin of the vegetables. The study will also look at socio-economic

factors that influence consumer willingness to purchase processed vegetables. Socio-economic factors will include factors such as age, gender, marital status, race, role of the respondent in the household, household size, education level of the respondent, employment status of respondents, personality, economic situation, family structure and environment of an individual. . In addition to this, the study seeks to determine various marketing strategies that can be used by small agro-processors in marketing their vegetables.

1.2 Problem statement

Although, there are technical and institutional constraints that limit small vegetable producers from participating in markets such as, lack of technical knowledge, equipment, physical and marketing infrastructure as well as the incapability to add value and meeting market quality demands (Renkow *et al.*, 2003; Bertolini, 2004; Baloyi, 2010; Collins, 2011), lack of knowledge about consumer perceptions and factors that affect consumers' purchasing decisions presents a very difficult situation for small agro-processors' participation in the market. Davis (2006) mentions that small-scale agro-processors often try to enter the markets without any relevant market analysis and this always results in the failure to sustaining success in the market place. Further, Bertolini (2004) pointed out that lack of relevant market information by small scale vegetable farmers is the principal reason why these farmers often produce products that are not wanted in the market. As a result, they fail to participate in lucrative markets and hence leading to their downfall. Burt *et al.*, (2008) therefore, suggests that a deeper understanding of a market is important for emerging processors as this would help them enter the market successfully. Although technical and institutional constraints that limit small vegetable producers from participating in the markets cannot be under-emphasised, consideration and attention needs to be shifted to other factors that limit the success of small scale producers in the market. These include factors that influence perceptions and preferences of consumers (product attributes) and socio-economic factors that influence decisions of consumers to buy certain vegetables (FAO, 2004a).

There has been growing interest on agro-processing as a way of improving livelihoods for the poor and as a way of contributing towards Local Economic Development (LED) in South Africa (Mc Cann, 2005). This is also supported by the Department of Agriculture, Forestry and Fisheries (DAFF) which has shown so much interest in assisting small scale agroprocessors to access markets. DAFF has highlighted various challenges faced by small scale agroprocessors in accessing markets and the possible solutions they have put in place to enhance market access for these small scale agro-processors. However, whilst this seems to

be a road to relief, nothing has been practically done to solve the problems faced by small agroprocessors in accessing markets. As a result, new small vegetable agro-processors in South Africa are still faced with challenges of accessing markets. Furthermore, whilst interventions seem to have been put in place, more concentrates on technical and institutional constraints and no previous study in South Africa has looked at factors that influence consumer willingness to buy processed vegetables. This has offered motivation for this study so as to fill the gap in knowledge about what would impede access to markets for small agroprocessing firms even if their technical and institutional needs could be met. Therefore, this study aims to identify the factors that influence customer purchasing decisions with regard to new agro-processing business as well as determining various ways of penetrating into different markets.

The study will employ a survey and case study research techniques to gather data from individuals, supermarkets, schools and processors which will be relevant to answer all the research questions. The study uses the AgriParks Project at the University of Fort Hare as a case study.

1.3 Definition of terms

1.3.1 AgriParks

AgriParks is an initiative which was formed under the multi-institutional partnership by the Eastern Cape Department of Education (ECDoE) (OECD, 2008). The dual aim of the ECDoE is to improve community-wide food and nutritional security as well as to contribute to Local Economic Development (LED) (McCann, 2005). From the particular perspective of the ECDoE, this initiative looked towards improving the efficiency of the Department of Education's School Nutrition Programme (SNP) while also engendering a developmental procurement approach that supports local production and employment (ASPIRE, 2013). AgriParks being part of this initiative has its primary goal as that of matching public provisioning to localised supplier agents and the promotion of local production to meet public provisioning and other local demand (ASPIRE, 2013). A complementary objective invited by the SNP is to minimise costs of procuring commodities for local consumption while promoting local employment. In this study, focus will be on the University of Fort Hare-conceived AgriParks, a scheme that enables and supports an agri-value chain driven by local small–scale primary production, feeding into locally aggregated agro-processing and supported by collective marketing as well as similarly organised operational logistics.

1.3.2 Agro-processing

Agro-processing is defined by different literature in slightly different ways. Below are some of the definitions as presented in the literature. According to (Mhazo *et al.*, 2003), agro-processing activities comprise two major categories; primary and secondary operations. Primary processing involves activities such as crop drying, shelling/threshing, cleaning, grading, minimal processing and packaging (Mhazo *et al.*, 2003). These processes are primarily run out at the farm and only transform the commodity into a somewhat different form prior to storage, marketing or further processing. On the other hand, secondary processing entails an increase in the nutritional value of the product (Mhazo *et al.*, 2003). More often than not, the physical form or appearance of the commodity is completely altered from the original and this results in the increased market value of the products. Some examples of secondary processing are milling grain into flour, grinding groundnuts into peanut butter, pressing oil out of vegetable seeds, pressing juice out of fruit, making cheese out of milk and manufacturing of mince meat (Mhazo *et al.*, 2003).

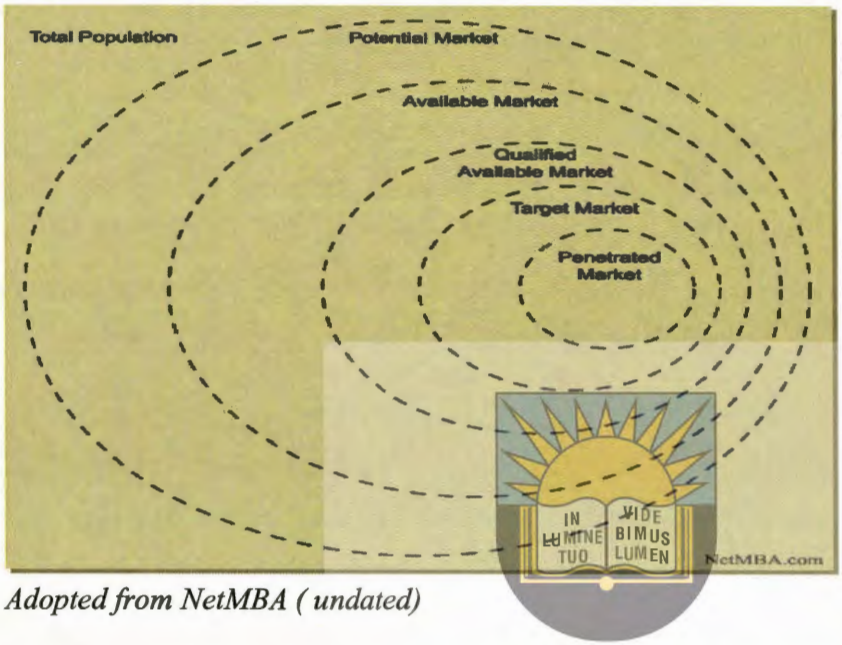
Wilkinson and Rocha (2009) on the other hand, explain the agro-processing industry as the one that covers a broad area of postharvest activities, comprising artisanal, minimally processed and packaged agricultural raw materials, for industrial and technology-intensive processing of intermediate goods and the fabrication of final products derived from agriculture.

Lastly, DAFF (2012) explains agro-processing as a process that ranges from simple preservation such as sun-drying and other activities immediately following harvesting, to capital intensive of such articles as textiles, pulp and paper (FAO, undated). The key defining attribute of the agro-processing sector is the perishable nature of the raw materials employed in its processes (Hailu *et al.*, 2009). In this study, an operational definition of agro-processing as was defined by Mhazo *et al.*, (2003) will be used. It should be noted however that the focus of this study will be on primary processing. This means that when talking of processed vegetables in this study, reference is being made to vegetables that have been cleaned, minimally processed and packaged and or dried for convenience to customers.

1.3.3 Market

The term market, in marketing, refers to the group of consumers or organisations that are interested in the product in question and has the resources to purchase this product and is permitted by law and other regulations to acquire the product (NetMBA, undated). The

market definition begins with the total population and progressively narrows down until it reaches the penetrated market. This is shown in the following diagram.



Adopted from NetMBA (undated)

Figure 1.1: Shows how the market narrows from the total population until it reaches the penetrated market.

As is shown in Fig 1.1, the market definition begins with the total population, which includes everyone; those with interest and those without interest in a certain product. Of the total population, it narrows down to the potential population. The potential population includes only those individuals, firms and organisations within the total population who have an interest in buying the product in question. However, being part of the potential market is not enough because without the money, one cannot be able to buy the product. Hence, from the potential population, the market definition narrows down to the available market (those with the money to buy). The definition further narrows down to the qualified available market which includes those in the available markets who legally are permitted to buy the product and into the target market, which is the segment of the qualified available market that the firm has decided to serve. Finally the definition narrows down to the penetrated market, which includes only those in the target market who have purchased the product. Having seen all the stages in the market definition, it should be noted that the major focus of this study is on assessment of the potential market of processed vegetables, meaning to say it seeks to find those in the total population who have an interest in buying processed vegetables. Knowing the scale of the potential market is a good starting point since it gives an overview of the potential of the product in the market. Without knowing the potential market, it can be

impossible for one to deduce for instance the target market since before selecting which market to serve, one has to know if there is product potential in that market. Thus, knowing the potential market can show whether it can be feasible to produce a product or not. As such, this study seeks to assess the potential markets for selected, processed vegetables by addressing the following objectives:

1.4 Broad objective

The broad objective of this study is to assess potential markets for selected processed vegetable products.

1.5 Specific objectives

The specific objectives of this study are to:

i) Evaluate consumers' perceptions about different processed vegetables.

ii) Determine factors which affect customer's willingness to buy processed vegetables.

iii) Determine and document market penetration strategies that can be used by small vegetable processors to successfully market their produce.

1.6 Research hypotheses

The hypothesis put forward for this study are:

i) Customers do not have positive perceptions about different processed vegetables.

ii) Socio-economic factors do not affect customers' willingness to purchase processed vegetables.

iii) There are no market penetration strategies that can be used by small vegetable processors to successfully market their produce.

1.7 The significance of the study

Considering the lack of knowledge with regard to factors that affect individulas to purchase or to be willing to purchase processed vegetables, this study therefore aims at filling this gap in knowledge. The study is aimed at finding factors that may impede small agroprocessors'successful participation in the market. These factors have been overlooked by many studies and particularly in South Africa as has been highlighted in the problem statement, no studies have been done on them yet they offer a very critical barrier towards

market access. As was noted by Davis (2006) that the principal reason why small agroprocessors fail to participate in the market is due to lack of relevant market information, overlooking such factors which influence indiviuals and only concentrating on technical and institutional constraints does not really help. As such, this research will determine important factors that influence individual buyers purchasing behaviour. This may help processors to know what factors to consider most when preparing their products for the market. The last objective of the study is about determining marketing strategies that can be used by small agro-processors to market their produce. This will help to equip small agro-processing firms with knowledge about how to market their produce and remain competitive in the market place.

1.8 Limitations of the study

As with any other study, the current study has its limitations such as time, financial considerations and the nature of the research design. Furthermore, the study only includes potential customers in Amathole District, which means the results cannot be generalised to the whole country and the whole world. In addition, it was challenging to get respondents who are willing to participate in the research, especially when it came to shop managers since they were sometimes too busy to accommodate such activity. This can therefore limit the data to be collected and the sample sizes will be reduced thereby limiting generalisations of results.

The use of questionnaires limits useful information from respondents. Standardised questionnaire items often represent the least common denominator in assessing people's attitudes, orientations, circumstances and experiences. The study used cross-sectional data which means data was collected at one point in time and this does not capture the changes that could have occurred over time. To add on, the use of convenience sampling in selecting customers can be highly unrepresentative of the total population. The lack of secondary data sources puts a strain on literature review and also absence of guideline when conducting a research of such a great magnitude makes the research process cumbersome. The shortcomings of this study should be noted as they could provide opportunities for future research.

1.9 Outline of the study

The study comprises of seven chapters. In chapter one the background of the study, problem statement, definition of terms, objectives, hypothesis, and research questions were presented.

In chapter two a review of literature on consumer perceptions, marketing strategies, marketing channels and challenges that limit participation of small producers in the market were presented. In chapter three a description of the study area and an explanation of the research methodology which the researcher employed in order to be able to answer the research questions of the study were presented. In chapter four, five, and six present the results of the study that was done on individuals, supermarkets, schools and processors were presented. Lastly the study presents chapter seven which is the discussions, conclusions and recommendations.

CHAPTER 2: LITERATURE REVIEW

2.0 Introduction

This chapter presents a literature review on customers' perceptions and factors that influence customers' perceptions about buying processed vegetables. These factors include factors related to the product such as quality, freshness, colour, texture, packaging and many others as well as socio-economic factors such as age, size, marital status and economic situation. The chapter proceeds by presenting marketing research and channels that can be used by vegetable growers and institutional and marketing challenges that limit participation of farmers in the market.

2.1 Customers' perceptions

A customer's perception has been defined by Ragaert *et al.*, (2004), as the marketing concept that encompasses a customer's impression, awareness and consciousness about a company or its offerings. Customer perception is typically affected by advertising, reviews, public dealings, social media, personal experiences and other channels (Ragaert *et al.*, 2004). During the decision-making process, consumers rely on different attributes before deciding whether or not to buy and which product to opt for. These attributes can be divided into intrinsic and extrinsic ones (Ragaert *et al.*, 2004). Examples of intrinsic factors are taste, odour and texture and those of extrinsic factors are the appearance of the package and its characteristics. Since attributes are evaluative criteria based on which consumers form beliefs and develop attitudes and intentions, insights into the perceived importance and evaluation of attributes are a key to better understand consumer behaviour (Ragaert *et al.*, 2004).

Perception is subjective and selective information processing (Alvensleben and Meier, 1989). In the case of habitual buying, rather simple information processing programs are used, which may lead to perceptual distortions. Important to the perceptual process is the so-called key information, which saves the consumer a further search and processing of information.

In general, it has been found that the appearance of vegetable is the dominant criterion for consumer perception (Alvensleben and Meier, 1989). That is to say, if a product image is positive, the consumer tends to exhibit a selective perception of the positive product properties which leads to a perception distortion and a stabilization of the positive image and the opposite is true (Alvensleben and Meier, 1989). In the following discussion, various attributes that may affect customers' decisions to buy vegetables are discussed.

2.1.1 Quality

Quality is a complex perception of many attributes that are simultaneously evaluated by the consumer either objectively or subjectively (Lazarova, 2010). It is often categorised into three dimensions, namely; search, experience and credence dimensions (Lazarova, 2010). Examples of search dimensions are appearance and colour and that of experience are taste and flavour and that of credence include healthy and organic (Lazarova, 2010). As such, during the decision-making process, the brain processes the information received by sight, smell, and touch and instantly compares or associates it with past experiences or with textures, aromas, and flavors stored in its memory (Camelo, 2002).

Over the past years, consumers have increasingly become concerned about the quality of food they eat (Lazarova, 2010). For example, Camelo (2002) and Lazarova (2010) have stated that consumers have become increasingly concerned about food quality, especially regarding how, when and where the foods are produced. Therefore, food quality can be affected by the kind of processing it passes through, the time during which it is processed and the environment in which the food is processed or produced. For instance, Camelo (2002) mentioned that, when it comes to vegeta[illegible]on, certain non-material properties such as production ethics, cultivation without additives, and culinary aspects are important points when defining quality (Camelo, 2002). With regard to how and when the products are produced, often the consumers judge quality based on their experience with different company brands which can be measured in terms of prices, health aspects, and reliability of deliveries (Camelo, 2002).

For example, just by looking at the colour, the consumer knows that a fruit is unripe and that it does not have good flavour, texture or aroma (Camelo, 2002) . If colour is not enough to evaluate ripeness, the consumer uses the hands to judge firmness or other perceptible characteristics. The aroma is a less used parameter except in those cases where it is directly associated to ripeness like in melon or pineapple. This comparative process does not take place when the consumer faces, for the first time, an exotic fruit whose characteristics are unknown (Camelo, 2002).

From the above discussion, it has been shown that quality encompasses various attributes such as taste, colour, safety, flavour and many others and these determine whether or not the individual will buy the vegetables or not. This could also mean that any deficiency in one of the attributes such as colour, texture and flavour may probably lead to consumers perceiving that the vegetables are not of a good quality. Hence, may lead to reduced sales, particularly to

quality oriented customers. As such, processors should produce products of high quality or of quality that does not offend the consumers in order to maintain their share in the market.

2.1.2 Texture, Flavour and Aroma

The texture and aroma of vegetables can only be evaluated during the consumption stage unlike packaging and colour, which can be evaluated at the time of prior to purchase. According to FAO (2004b) and Oey *et al.,* (2008) the perception of the aroma, and texture is the final evaluation that takes place when the product is consumed and when sensations perceived at the moment of purchase are confirmed. If satisfaction is the result, loyalty is generated. For example, if someone is satisfied with a certain vegetable say stir fry produced by a certain company, that person is likely to continue to buy that specific brand thereby becomes loyal to that specific brand.

Alongside with texture and aroma, flavour is also part of the final evaluation that takes place at the time of consumption. Flavour is the sensory impression of a food that is determined mainly by the chemical senses of taste and smell. The human tongue can distinguish only among five distinct qualities of taste, of which sourness, sweetness and bitterness are the most important ones regarding the flavour of vegetables (Oey *et al.,* 2008).

Whilst some scholars FAO (2004b) and Oey *et al.,* (2008) have noted that texture and flavour can only be evaluated when the product has been consumed, other scholars such as Underwood *et al.*, (2001) and Silayoyi and Speece (2004) have suggested that consumers are more likely to spontaneously imagine aspects of how a product looks, tastes, feels, smells, or sounds while they are viewing a product picture on the package. These authors argue that the package communicates favourable or unfavourable implied meaning about the product hence customers, for instance, can predict how the texture, flavour and aroma will be like just from merely looking at the packaging of the vegetables.

These attributes are very important, especially for repeated purchases of vegetables and also for successfulness of businesses. The reason being that one can only be interested in continuing to buy a product only if it tastes good the first time he or she bought it.

2.1.3 Colour

Colour is yet, another important quality characteristic of vegetables and a major factor affecting sensory perception and consumer acceptance of vegetables (Oey *et al.*, 2008). Consumers are also said to learn colour associations, which lead them to prefer certain colours for various product categories (Oey *et al.*, 2008). For example, using colour as a signal on the packaging can be a potentially strong association, especially when it is unique to

a particular brand. However, people in different cultures are exposed to different colour associations and develop colour preferences based on their own culture's associations (Silayoyi and Speece, 2004).

2.1.4 Packaging

The importance of package design as a vehicle for communication and branding is growing in competitive markets for processed food products and processed vegetables inclusive (Silayoyi and Speece, 2004). Thus, visual package elements play a major role, representing the product for many consumers, especially in low involvement, and when they are rushed (Rettie and Brewer, 2000). The logistic function of packaging is mainly to protect the product during movement through distribution channels. In the marketing function, packaging provides an attractive method to convey messages about product attributes to consumers at the point of sale.

Whatever the logistics considerations are, packaging is one key food product attribute perceived by consumers (Silayoyi and Speece, 2004). It cannot escape performing the marketing function, even if a company does not explicitly recognize the marketing aspects of packaging. The package is a critical factor in the decision-making process because it communicates to consumers. The package's overall features can underline the uniqueness and originality of the product. In addition, quality judgments are largely influenced by product characteristics reflected by packaging (Silayoyi and Speece, 2004). For instance, if the package communicates high quality, consumers assume that the product is of high quality. If the package symbolizes low quality, consumers transfer this low quality perception to the product itself. It is therefore important to vegetable processors to take the packaging of their produce seriously since bad packaging may negatively affect sales of their vegetables (Silayoyi and Speece, 2004).

2.1.5 Price

In traditional economics, prices have been treated simply as a cost (Tatt, 2010). But in today's world, price serves a lot more than just being a cost. For instance, according to Tatt (2010) price is one of the non-product attributes of brand associations where it can be an important association in the formation of brand perceptions. This is particularly with regard to value and desirability and is a criterion by which consumers often segment their knowledge of a market or category (Tatt, 2010). Price is one of the "4Ps"of a marketing mix and it can say a lot about a product. For example, price can be an indicator for the quality of a product. There are various components that may contribute to the final price of a product and these include high quality products, fancy packaging, exclusive store locations, expensive

promotions, advertising and campaigns (Tatt, 2010). Therefore, many companies make large investments into these components in order to make their products instantly recognizable and familiar. As a result, small agro-processors should also be prepared to invest in these components of pricing to attract customers and to be successful in business.

Different pricing systems can be used by processors to attract customers to buy their produce. One very appropriate pricing strategy that is ideal for new entrants in the market or when building on a small market share is penetration-pricing. Penetration-pricing involves low price setting in order to profit based on volume of sales and market share (Pradman, 2010). This will only be possible where demand for the product is believed to be highly elastic, that is, demand is price-sensitive and either new buyers will be attracted, or existing buyers will buy more of the product as a result of a low price. A penetration pricing strategy may also promote complimentary and captive products. The main product may be priced with a low mark-up to attract sales (it may even be a loss-leader) (Pradman, 2010).

2.2 Socio-economic factors

Socio-economic factors also influence t king of consumers to buy processed vegetables. Thus, in addition to product attributes that a consumer considers when making decisions to purchase processed vegetables, there are socio-economic factors that also influence consumer decisions. These include age, economic situation, education, health and nutrition concerns, and family structure (Gajjar, 2013). These factors are explained below.

2.1.1 Age

Age and life-cycle have potential impact on the consumer buying behaviour. It is normal that consumers change their routine purchase of goods and services with the passage of time (Gajjar, 2013). For example, a young person may be interested in buying junk food such as chocolate and chips but as he or she grows, his or her needs for food may change and the person will need to buy more of healthier foods to boost his or her health. In addition to that, Daria and Safaei-Sara, (2011) noted that people in different age groups have different needs, taste and preferences. Daria and Safaei-Sara, (2011) went on to say that, even though people in the same age group may differ in many ways, they still have a desire to follow a shared culture and types of values (Daria and Safaei-Sara, 2011). This therefore means consumers of the same age are expected to have similar interests in what they prefer to buy.

2.2.2 Gender

Many products are differentiated for either men or women. Men and women usually have different preferences and a study of food preferences has shown that the former are more

interested in using meat while the latter eat more fruits, juice and vegetables (Solomon, 2006).

2.2.3 Economic Situation

The consumer's economic situation has great influence on his or her buying behaviour. If the income and savings of a customer are high, then he or she will purchase more expensive products (Gajjar, 2013). On the other hand, a person with low income and savings will purchase inexpensive products (Shah, 2010). This therefore means that many poor households will consider buying basic food stuffs first, such as potatoes, rice and flour other than buying vegetables.

2.2.4 Family structure

Family life-cycle consists of different stages such as young singles, married couples and unmarried couples, which help marketers to develop appropriate products for each stage category (Gajjar, 2013). A person's family and his or her marital status are the most influential factors on a person's buying behaviour. Families with young children are more concerned for healthy foods and fruits while single households or those with older children are likely to use more junk foods (Daria and Saraei-Sara, 2011). As such, when it comes to decision making on vegetable purchases, it is likely that the family in which a person comes from will influence which types of vegetables to buy and even the frequency of buying the vegetables. For instance, if one grows up in a family which used to buy only unprocessed vegetables, the chances of this person buying processed vegetables will be very slim unless if the person is subjected to an environment which will change their mindset. Similarly, married couples are more likely to be willing to buy vegetables to cater for the younger children in the family who still need to eat healthy.

2.2.5 Perception

Selecting, organizing and interpreting information in a way to produce a meaningful experience of the world is called perception (Alvensleben and Meier, 1989). There are three different perceptual processes which are selective attention, distortion and retention (Alvensleben and Meier, 1989). In case of selective attention, marketers try to attract the customer attention, whereas, in the case of selective distortion, customers try to interpret the information in a way that will support what they already believe (Alvensleben and Meier, 1989). Similarly, in the case of selective retention, marketers try to retain information that supports their beliefs. The understanding of how customers interpret these types of perceptual processes can be helpful for vegetable producers to understand how customers' minds work and probably find ways of persuading them to like their produce.

2.2.6 Health and Nutrition

Health related attitudes influence food choice and consumption (Hailu *et al.*, 2009 and Zhang 2011). Consumers are continually becoming more concerned about the food they eat and they always fear it may be harmful to their health (Zhang, 2011). This has resulted in a generation of consumers, which is so careful in choosing food. Significant proportions of consumers are increasingly becoming aware of both the health benefits and risks in their diet patterns. The 2006 Consumer Perceptions of Food Safety and Quality survey (Agriculture and Agri-Food Institute of Canada, 2007) for instance, showed that 31 percent of consumers ranked nutrition as a top of mind issue for food at home consumption as compared to 24 percent in 2004 (Zhang, 2011). This trend hence shows us that as times change, the behaviour of consumers is also changing.

Nutrition and health of vegetables may be influenced by the origin of the vegetables in regards to where and how they are grown. That is to say, the way vegetables are produced can affect their nutrition and health. For instance, the use of sewage and polluted waste water without adequate regulation and technology may generate major health risks to consumers. Several studies have shown how the use of [illegible]ted waste water generates several health risks associated with internal parasites, bacterial and viral infections, and can cause both acute and chronic illnesses (Scott *et al.*, 2004; Shan, 2008; Arora *et al.*, 2008). As a result, the use of sewage and polluted waste water in vegetable production has become an issue in food policy and it remains as a challenge to vegetable producers and policy regulators to ensure that vegetables are grown in a safe environment.

Another cause of concern is the use of pesticide and fertilizer residues in vegetable production (Henson and Reardon, 2005). The use of excessive amounts of pesticides and fertilizers can pose serious threats to the health of some people since it may result in food borne diseases such as diarrhoea and may also lead to loss of taste of the vegetables (Henson and Reardon, 2005). Due to this, consumer concerns about safety of vegetables have increased and this leaves a challenge for vegetable producers to ensure that they produce vegetables in a manner that does not risk consumers' lives and that guarantees safety to consumers. Dunn (2000) postulates that proper disease management, harvest practices and postharvest handling activities are critical to marketing success. Hence, it is the duty of each prospective processor to ensure that the vegetables they buy for processing are well handled from planting till after harvest as it helps them to buy and process vegetables that will not harm their customers, thereby maintaining their positions in the market.

Another factor that has led to consumers considering how nutritious and healthy vegetables they eat are has been said to be rising consumer incomes (Henson and Reardon, 2005; and Ngiqi *et al.*, 2010). Henson and Reardon (2005) noted that, due to a rise in consumer incomes and changes in consumers' lifestyle brought about by increases in incomes, consumers have become more concerned about the nutrition levels of vegetables they eat.

2.3 Marketing research and market penetration strategies

2.4 Marketing research

The marketing process is said to begin with the determination of the market requirements of buyers (Ntshephe, 2011). For example, market requirements would include grading, quality, quantity, food safety, price determination distribution channels and promotional issues. As such, the marketing process is primarily concerned with the provision of information about markets and the reaction of these to various products, price, distribution and promotion decisions. Marketing research is therefore a key part of the marketing information system because it makes a major contribution to marketing mix planning (Ntshephe, 2011).

Perrault and McCarthy (2002) mentioned that successful marketing strategies require information on potential target markets and their likely responses to market mixes as well as about competition and other marketing environment variables. Farmers also need information for implementation and control. Without good information, farmers are left to guess, and considering the ever-changing nature of today's markets, small holder farmers are subject to failure. It is therefore advisable for farmers to engage in a process of continually collecting, assessing and analysing information that they need to make sound decisions so as to keep their businesses running (Perrault and McCarthy, 2002). Thus, successful marketing depends on developing a thorough marketing plan that outlines how to supply the produce reliably, consistently and at a profit since the whole point of being in business is to make a profit.

Adequate access to relevant marketing information that can be understood by small scale producers with low levels of knowledge and which is relevant to them remains a problem in the smallholder sector including the small scale agro-processers (Davis, 2006). This has limited adequate access to vegetable markets by small-scale agro-processors resulting in limited growth and less income realised by these vegetable processors. As a result, this calls for market research which is relevant to small producers so as to help them understand what they are supposed to do when they intend to serve a certain market and how to go about market research if they want to do it. This is necessary as this would help them know the

characteristics of the markets they intend to serve and also enable them to select relevant marketing strategies for each market.

2.5 Market penetration strategy

According to Quick MBA (undated), there are basically four marketing strategies and these include market penetration, market development, product development and diversification. As a seller, one has to decide upon a particular strategy that will help him or her realize his or her objectives. But for any emerging seller, the most important strategy, is the market penetration strategy since the marketer has to first enter into a certain market before he or she can be able to use other marketing strategies. For example, without a market, it is impossible for one to undertake market development.

Market penetration is said to be the least risky of the four marketing strategies, according to the Quick MBA, (undated). This is because the firm uses its existing resources and capabilities to satisfy existing market segments (Quick MBA, undated). Thus the seller attempts to fill the needs of an existing market with its present resources or products.

This type of strategy encompasses a number of approaches and these differ with different sellers. For instance, the processor may want to increase the number of customers in present markets. He or she may also wish to increase the consumption of particular vegetables by both present and potential customers. The seller can successfully do this through adding more convenient business locations or remote locations and thus helping him to get more customers (Quick MBA, undated). In a growing market, simply maintaining market share will result in growth and there may exist opportunities to increase market share if the competitors reach their capacity limits.

There are various market penetration strategies through which the seller can satisfy the needs of his existing market and even attract new potential customers. These include penetration factors such as product, pricing, promotion, place (distribution), packaging and logistics or a channel, which is about how to get the products to the market (Gooch *et al.*, 2006). The following discussion will focus more on these market penetration factors also known as positioning or branding of the product or marketing mix. However, it should be noted that market penetration has limits and once the market approaches saturation another strategy must be used if the firm has to continue to grow (Gooch *et al.*, 2006).

2.5.1 Price

Loudon *et al.*, (2005) suggest that pricing and marketing go hand in hand and that price must fit the market that the positioning strategy is attempting to capture as well as current market conditions.

As such, making price adjustments is one market penetration strategy that small agro-processors may use in penetrating a market. For instance, by lowering prices, the business can generate more sales volume by increasing the number of units purchased and can make prices more appealing to consumers when compared to the competitors. Agro-processors may also pursue a strategy of higher prices in the hope that higher revenues per unit sold translate into higher sales volume and a resulting increase in market penetration (Loudon *et al.*, 2005). With this strategy, a concern is that higher prices could prevent customers from making a purchase unless if this higher price coincides with high quality and convenience factors. In addition to the above pricing strategies, a comparable pricing strategy where prices are set comparable to competitor products can also be employed by the agro-processing firms (Loudon *et al.*, 2005).

2.5.2 Product

Coughlan *et al.*, (1996) suggested that the first consideration in positioning a product should be the product quality. Further, Coughlan *et al.*, (1996) stated that whenever producers attempt to brand a product then quality becomes a crucial component of the strategy. In order to brand a product, producers and manufacturers must engage companies whose vision and strategies match the product's intended brand image (Coughlan *et al.*, 1996). Also, there must be a consumer group that would be interested in this higher quality product and willing to purchase it (Gooch *et al.*, 2006). This part of product positioning also includes the design and packaging of the product, servicing customers, and any other value-added element to the product (Joseph, undated).

2.5.3 Packaging

According to FAO (1988), packaging serves a very important role in more developed marketing systems such as market penetration and competitiveness. FAO (1988) argues that proper packaging of a product can reduce bruising and crushing of the product when, for instance, it is being transported from the farm to the market. Packaging, can also improve the marketing of produce, reduce moisture loss, and prevent contamination or (re-contamination) of the product with spoilage organisms, reduce pilferage, maintain a sanitary environment during marketing (FAO, undated). As a result, packaging has been found to be one of the most critical operations in the marketing of vegetables. Packaging can also be complemented

by labelling which enables customers to easily identify the vegetable brand and the producers of that vegetable. This can be done by putting stickers on the vegetable packets or alternatively printing on the package.

2.5.4 Promotion

Another way through which agro-processors may increase market penetration is through greater promotional efforts. This can be done through launching an advertising campaign to generate greater brand awareness or implement a short-term promotion such as price reductions in order to attract buyers (Joseph, undated). The main reason of promoting a product is to increase sales for that product, hence it is important for the producer to know the characteristics of his target market.

When a producer promotes a product, they are looking normally to promote to a target or niche market audience (Loudon *et al.*, 2005). Therefore, in order to reach the correct target audience, messages must be formulated to be effective at presenting the essence of the positioning strategy to those potential target customers (Loudon *et al.*, 2005). Other forms of promotion must also be formulated to send the appropriate message regarding the branding strategy of the product (Loudon *et al.*, 2005).

There are basically two promotional strategies which are the 'Push' and the 'Pull' (Business Resource Software Inc., 2005). The 'Push' strategy involves the use of intermediaries to promote the product and it is most suitable for commodity products (products that are not very differentiated) (Business Resource Software Inc., 2005). The producer has to give an incentive to the intermediary for doing the promotional duties on their behalf. For example, the producer can persuade a retailer by offering an incentive to promote their produce and put it in shop shelves where it is accessible by consumers and since this retailer is already known by customers through regular visits, the product can easily gain popularity. On the other hand, a 'Pull' strategy involves initially promoting the product to the end user and this is best suitable for products that can be meaningfully differentiated from others, for example processed vegetables as differentiated from those that are not (Business Resource Software Inc., 2005). Under the pull strategy, the end user creates a demand for the product within the purchasing outlets (Business Resource Software Inc., 2005).

2.5.5 Place (distribution)

Placement decisions such as the types and number of purchasing outlets and other tactical issues for channels of distribution are also an important part of the market penetration

strategy. Distribution can be intensive, selective and exclusive and will fall after the branding of the product. For example, in the distribution of niche market goods it is less important to have many purchasing outlets than it is to target the correct purchasing outlets for the good (Coughlan *et al.*, 1996). Coughlan *et al.*, (1996) suggest that the more targeted the audience, then the more targeted the distribution of the product must be.

In any case, the seller must choose a penetration strategy that directly relates to its intended product positioning (Gooch *et al.*, 2006). Gooch *et al.*, (2006) also suggested that the selection of the appropriate market penetration strategy will also depend on the firm's or producer's familiarity with the product market to be entered.

2.6 Channels or logistics

Having made product, promotion, price and placement decisions, the next step in the market penetration process will be to decide upon the channels through which products will be moved to the end user. There are various marketing channels that can be used by vegetable processors to market their produce and include direct marketing, selling through intermediaries and multichannel distribution. The following discussion will elaborate on these marketing channels.

2.6.1 Direct selling

Direct selling which can also be referred to as direct marketing refers to a marketing method in which the farmer or producer sells directly to consumers (Auluck, 2013; Hall, undated and Burt *et al.*, 2008). Since direct selling involves selling directly to the customer, there is no need for establishing or creating marketing channels with this type of selling. This reduces costs to the seller associated with use of middlemen. However, whilst this is the case, there is a common challenge associated with direct marketing which is the difficulty of locating customers (Auluck, 2013). As such, successful direct marketing business requires knowledge of effective marketing, management practices, an entrepreneurial outlook and the right personality and skills for selling directly to consumers (Burt *et al.*, 2008). A lack of these skills can present a very difficult situation for the business as this may lead the business into running loses. For instance, if the seller has a bad character, such as being rude to customers, this can deter customers from buying from him or her which translates to a loss of sales. There are basically four direct marketing methods and these include U-pick or pick your own, farmers' markets, roadside marketing and subscription farming (Burt *et al.*, 2008).

Justification for establishing a direct farmer-to-consumer marketing outlet is based primarily on the producer's desire to increase the financial returns from farm production (Hall, undated). This opportunity for increased returns stems from opportunities to reduce marketing costs attributed to intermediaries in the supply chain and consumer desire to buy riper, fresher, higher-quality fruits and vegetables. These two factors combined have often generated substantially higher net returns for producers (Hall, undated). When the producer becomes the retailer, they have the opportunity to sell at a high price than the existing retail price and avoid paying for the use of middleman hence realising more returns.

According to Hall, (undated) and Xaba and Masuku, (2012) farmers can benefit from markets if their participation minimises transaction costs. Hall (undated) and Xaba and Masuku (2012) further acknowledged that the elimination of intermediaries tends to improve returns to producers since it reduces transaction costs. Furthermore, a study by Murthy *et al.*, (2012) indicated that the price spread of vegetables with respect to various marketing channels showed that the producers' share had an inverse relationship with the number of intermediaries. This means that the net price received by the producers was relatively higher in the channels in which the produce was sold to the consumers. Whilst the use of intermediaries could promote competitive market conditions, at times, these intermediaries tend to suppress poor farmers by paying them too little (Xaba and Masuku, 2012). For example, in Swaziland, the NAMBoard is responsible for the promotion of vegetable production and their marketing. However, in many occasions, farmers were said to complain that the institution pays them unsatisfactory prices (Xaba and Masuku, 2012).

Apart from the above findings, Camelo (2002) noted that, sometimes consumers preferred direct contact with the producers compared with impersonal service, even though the latter was more efficient in some cases. Camelo (2002) went on to say that, direct sales to consumers provided the opportunity to reduce marketing costs and to add value to the product. In this way profit margins are increased since they do not need to pay any transaction costs to intermediaries. Direct selling is one way through which vegetable producers can market their produce and realise more profits, but it has some drawbacks just like any other marketing channel (Camelo, 2002).

For example, for producers to maximise sales, they need to be aware of existing marketing tools they need to implement. If they are unaware, then problems will arise. One way to maximise sales could be through providing similar services as those provided by the retailers and wholesalers (Camelo, 2002). This means that producers will have to provide marketing services such as packaging, grading, transporting and many others at a lower cost than those

provided by the retailers and wholesalers (Xaba and Masuku, 2012). The absence of such services therefore calls for the services of retailers and wholesalers and thereby brings us to another type of marketing channel named selling through intermediaries.

2.6.2 Selling through intermediaries

This is another way through which goods can be moved from the producer to the ultimate consumer. It is ideal, especially in situations where direct marketing provides outlets for products that do not meet the specifications of large commercial buyers (Xaba and Masuku, 2012). In other words, it is ideal where market failure arises through the use of direct marketing.

Terminal wholesale markets are probably the most common type of this marketing channel (Camelo, 2002). Camelo (2002) states that terminal wholesale marketing involves produce supplied from different growing areas, assembled and sold through intermediaries (wholesalers, distributors, importers, and others) to retailers, food service companies, supermarket chains or smaller regional markets. The advantages of terminal markets are that, there is a high concentration of supply and demand as well as larger volumes that can be traded. It includes the fixing of reference prices for the produce traded. Fruits and vegetables are packaged according to market handling and transport methods. Wholesalers usually take ownership of the produce or they can sell produce on a commission basis (Camelo, 2002). This means that the only duty that the producer does is to supply to the terminal market and then wait for his money. Of course, there are some forms of commercial agreements and relationships that should exist between the buyers and sellers. That is, they need to sign contracts that will govern their business activities.

Camelo (2002) describes the fruit and vegetable sector as one that comprises many small-scale farmers on small plots in many production areas around a country and which are often located in areas far away from their major markets. Camelo (2002) stated that, this is the most important reason as to why produce has to be distributed indirectly to consumers through middlemen.

Vegetable farmers prefer selling through intermediaries because of stability and confidence in local markets, as well as the likelihood of increasing performance through specialisation in sorting, storing and transportation (Xaba and Masuku, 2012). Martinez and Thornsbury (2006) submit to the use of intermediaries in selling of fresh produce due to their awareness of the consumers' growing concerns about health and safety of produce. Such concerns include farm-based and handler-based issues such as the use of 'good agricultural practices' to

reduce microbial contamination and pesticide residue risks, validation of claims such as organic, and other credence attributes. Intermediaries often supply these assurances through third-party certification that all parties in the chain, including themselves, are following the rules (Martinez and Thornsbury, 2006).

Reports by Martinez and Thornsbury, (2006) and Hinson *et al.*, (2006) have shown that there has been an increasing demand for third party certification and traceability. Intermediaries were found to be so important since most of them meet the special requests applicable to packaging and organic or environmentally friendly products in multiple ways, including coordination with their suppliers to make product or service adjustments (Hinson *et al.*, 2006). It can therefore be concluded that selling through intermediaries is so helpful in conditions were the small scale producers cannot meet the requirements of consumers. One reason being that small scale producers are often too poor hence they lack the capital to undertake some complicated activities like quality assessment, good packaging and product branding.

2.6.3 Multichannel distribution

Multichannel distribution (also called dual distribution) describes a wide variety of marketing arrangements in which the manufacturer or producer uses more than one channel to simultaneously reach the end user (Mullins and Walker, undated). For example, the producers may sell directly to the end users as well as sell to other companies for resale. This can be seen as an opportunity for vegetable sellers to get profits from different categories of customers at once. It should be noted that whilst this type of marketing channel is associated with high returns, it is bound to cause conflicts, especially where one or more channels are used for the same target market (Hinson *et al.*, 2006). According to Mullins and Walker (undated) the use of multiple channels by producers is a good way of increasing sales. For example, a producer can sell directly to individual consumers and also use intermediaries to market its products. However, in the same study, Mullins and Walker (undated), criticized the use of the multichannel distribution due to its weaknesses of causing conflict and control problems in some cases. As mentioned above, conflicts may occur where different channel members try to target the same customer segment and control problems may arise when it becomes hard for the single producer to coordinate the different channels (Mullins and Walker, undated). All the same, such systems can provide complete market coverage as compared to the direct and intermediary channels (Mullins and Walker, undated).

Studies carried-out by (Murthy *et al.*, 2012; Soviana and Puspa, 2012) have shown that the multichannel system is associated with inefficiencies and low productivity when it came to

locally grown fruits and vegetables. Murthy *et al.*, (2012) actually gave evidence of such in the marketing of tomatoes in Andhra Pradesh. Murthy *et al.*, (2012) found that in the marketing of tomatoes specifically, the participation of a corporate body between producer and consumer in the intermediary marketing system indicated high efficiency to more than 100% followed by the multi-channel distribution system. In the case of the multi-channel distribution system, the marketing efficiency was higher in the producer-retailer-consumer chain which was represented by 90% followed by the producer-wholesaler-retailer-consumer which was represented by 75% (Murthy *et al.*, 2012). This therefore indicates that the use of more intermediaries in the supply chain reduces market efficiency.

The objective of the companies in using multichannel marketing is basically to make it easy for consumers to buy from them in whatever way is most convenient. However, to be more effective this type of channel calls for better supply chain management systems so that details and prices of produce are consistent across the different channels (Soviana and Puspa, 2012). Considering the fact that most of the small scale producers are poor, it becomes very difficult for them to undertake this type of market hence leading to market failure. Whilst small vegetable sellers have got a number of c[illegible]ilable for them to market their produce, they are faced by other numerous challenges which limit their participation in the market. These are discussed in section 2.7 below.

2.7 Challenges that limit participation of vegetable processors in the market.

Small scale processors face a number of challenges, which increase risk and uncertainty and act as disincentives for increased production consequently preventing them from accessing agricultural markets. These challenges affect levels of production as well as the capacity of the small scale processors to participate in marketing.

2.7.1 Lack of human capital

Small-scale producers are often characterised by high illiteracy and poor technological skills (Jayne *et al.*, 2003). High illiteracy and poor technological skills can be a serious obstacle in accessing useful formal institutions that disseminate technological knowledge (Jayne *et al.*, 2003). Thus, most of emerging producers are not capacitated with enough skills such as technological, financial and marketing skills which are essential in business. As such, they are usually unable to meet the standards that are required in their business world such quality standards (Jayne *et al.*, 2003). Furthermore, Renkow *et al.,* (2003) also mentioned that small scale producers also lacked production knowledge. Lack of production knowledge leads to lower quality in production, hence, reducing their access to markets. Due to these problems,

Renkow *et al.*, (2003) suggested that the development and dissemination of improved agricultural technologies are an important vehicle for improving agricultural productivity.

In addition to that, Collins (2011) pointed out that investment in production techniques and technology required comparable investments in human capital in order to attain agricultural development. It is therefore important to equip producers, new and old ones, with skills and knowledge so as to improve their chances of participating in markets. Participating in high value markets means that small scale farmers have the opportunity of earning high incomes (Renkow *et al.*, 2003). This will motivate them to produce more, so that they can sell more and earn more incomes.

2.7.2 Constraints on production

In order to produce for the market, enough production resources such as land, labour force and capital are required. Poor access to these assets affects the way in which small vegetable agro-processors can benefit from opportunities in agricultural markets, especially in terms of the volume of vegetables traded and the quality of those products (Collins, 2011). Small scale producers lack consistency in terms of producing for the markets due to insufficient access to production resources. Collins (2011) argued that whilst small-scale producers seemed to have so many opportunities for agribusiness in high value products, most of these small-scale producers do not meet sophisticated demand requirements and increasing need for accountability for production practises that is expected by most customers.

2.7.3 High transaction costs

Another constraint to accessing markets by small-scale producers is the existence of high transaction costs caused by poor infrastructure and communication services in remote rural areas (Baloyi, 2010). Transaction costs also result from information inefficiencies and institutional problems such as the absence of formal markets (Jacobs *et al.*, 2008). Transaction costs also include costs of information, negotiation, monitoring, coordination and enforcement of contracts. Distance to the market, together with poor infrastructure and poor access to assets and information results in high business costs. Since many small-scale agro-processors are poor, they find it difficult to compete in lucrative markets due to high transaction costs. Traders with higher social capital are able to enter more capital-intensive marketing activities such as whole-selling and long distance transport, whereas traders with poor social networks face major barriers to entry into more lucrative market segments (Hemamala, 2006). Therefore, there is no doubt that high transaction costs tend to discourage commercialisation. As a result, minimising transaction costs is the key to improving access to high-value markets in developing countries because high transaction costs will make it

difficult for poor small scale producers to market their produce. For small scale agro processors to be integrated into the agricultural supply chain, greater effort is needed to reduce transaction costs and improve efficiencies along the agricultural value chain.

2.7.4 Lack of information on markets

Small-scale producers have often little information about the market demand due to the fact that market information is often costly to obtain. Even though they may gather information through contact with other actors in the commodity chain, the accuracy of such information concerning product prices at the local level, quality requirements, the best places and times to sell their products and about potential buyers is often questionable (Hemamala, 2006). Subsequently, this reduces small-scale producers' ability to trade their produce efficiently and to derive full benefits from the marketable part of their produce.

Bertolini (2004) stated that the principal disadvantage of the absence of knowledge about markets leads to the production of products that are not required in the market. The absence of knowledge within the small scale sector basically arises due to a lack of adequate managerial capabilities and experience in trading and business operations. The other problem small-scale producers have is that even when they try to solve the problem of inadequate capabilities and inexperience, by hiring skilled personnel, they often lack the resources (minimum wages) required by these professionals (Collins, 2011). Whilst this is the case, it should be noted that for small scale producers to succeed in the food market, this knowledge is very important, especially with the existence of stringent market requirements and standards with regards to quality and food safety (Bertolini, 2004). As such, for small scale producers to be successful in marketing, they need access to market information.

2.7.5 Low quantity and poor quality

In addition to the constraints faced by small scale producers as outlined in the previous sections of this work, their access to markets is also significantly reduced as a result of mostly poor quality products and low production quantities. Due to their low endowment in production factors, capital assets, the majority of small-scale agro-processors produce low quantities of products that are of poor quality which leads to their products being neglected by output markets. According to Baloyi (2010), increasing concentration in the food value chain is a global trend caused by increasingly demanding consumers and concerns about food safety, which make it very difficult for small holder farmers to enter high value markets in light of the low quantity and poor quality of their produce.

2.7.5 Concluding remarks

From literature, it can be seen that individuals can be influenced by their perceptions about various product attributes when making decisions to buy processed vegetables such as quality, taste, colour, appearance, freshness and price. Consumers are also affected by socio-economic factors in making decisions of whether or not to buy certain products. As a result, producers have to take all these factors into consideration when planning on what to produce so that they may produce products that are wanted in the market. It is therefore the duty of every prospective producer (seller) undertake a market survey in order to understand the characteristics of their potential customers. Apart from these, literature shows that there are various ways of marketing channels that producers may use to market their produce and these include direct channels, selling through intermediaries and multi-channels.

CHAPTER 3: DESCRIPTION OF STUDY AREA AND METHODOLOGY

3.0 Introduction

The main objective of this research was to assess the potential markets for processed vegetables in the Amathole District in the Eastern Cape province of South Africa. The research sought to establish if there are potential markets in some selected places in the Amathole District for processed vegetables through understanding the customers' perceptions towards selected, processed vegetables as well as through determining socio-economic factors that affect willingness of customers to buy processed vegetables. The research also sought to determine and document various market penetration strategies that can be used by small scale agro-processors to penetrate into these potential markets. This chapter begins by presenting a summary of Amathole District as well as a summary of selected towns which include King Williams, East London, Fort Beaufort and Alice towns. This same chapter focuses on the description of the research methodology, research design, sampling method, data collection instrument, data sources and data collection procedures and data analysis.

3.1 Description of the study area

The Amathole District Municipality is situated within the Eastern Cape province of South Africa and is located between Port Alfred and Port St Johns' (Amathole District Municipality Integrated Development Plan (IDP), (2012). It was formed after the first transformed local government elections that were conducted in December 2000. It stretches from the Indian Ocean coastline in the south to the Amathole Mountains in the north, and from Mbolompo Point (just south of the Hole-in-the-Wall along the Transkei Wild Coast) in the east to the Great Fish River in the west (The South African Led Network, undated). The district lies at the heart of the Eastern Cape Province and is presently home to about 1.7 million people (The South African Led Network, undated). The Amathole District Municipality includes all former administrative areas of the Eastern Cape (McCann, 2005). The District extends over 23,577.11 km2 and includes eight local municipalities, incorporating 21 former magisterial districts (McCann, 2005).

The eight local municipalities with each of them containing at least one urban service centre are; Amahlathi Municipality which include Cathcart, Stutterheim and Kei Road towns; Buffalo City Municipality which comprises of East London, King William's, Mdantsane and Bhisho towns; Great Kei which is made up of Komga, Kei Mouth, Hagga-Hagga, Morgan's

Bay and Chintsa towns; Mbhashe which includes Dutywa, Willowvale, Elliotdale rural towns; Mnquma comprising of the following towns Butterworth, Nqamakwe, Centane; Ngqushwa which includes Peddie and Hamburg rural towns; Nkonkobe which comprises of Seymour, Fort Beaufort, Alice, Middle Drift rural towns; Nxuba which comprises Bedford, Adelaide towns (The South African led network, undated). These are shown in Figure 3.1 below.

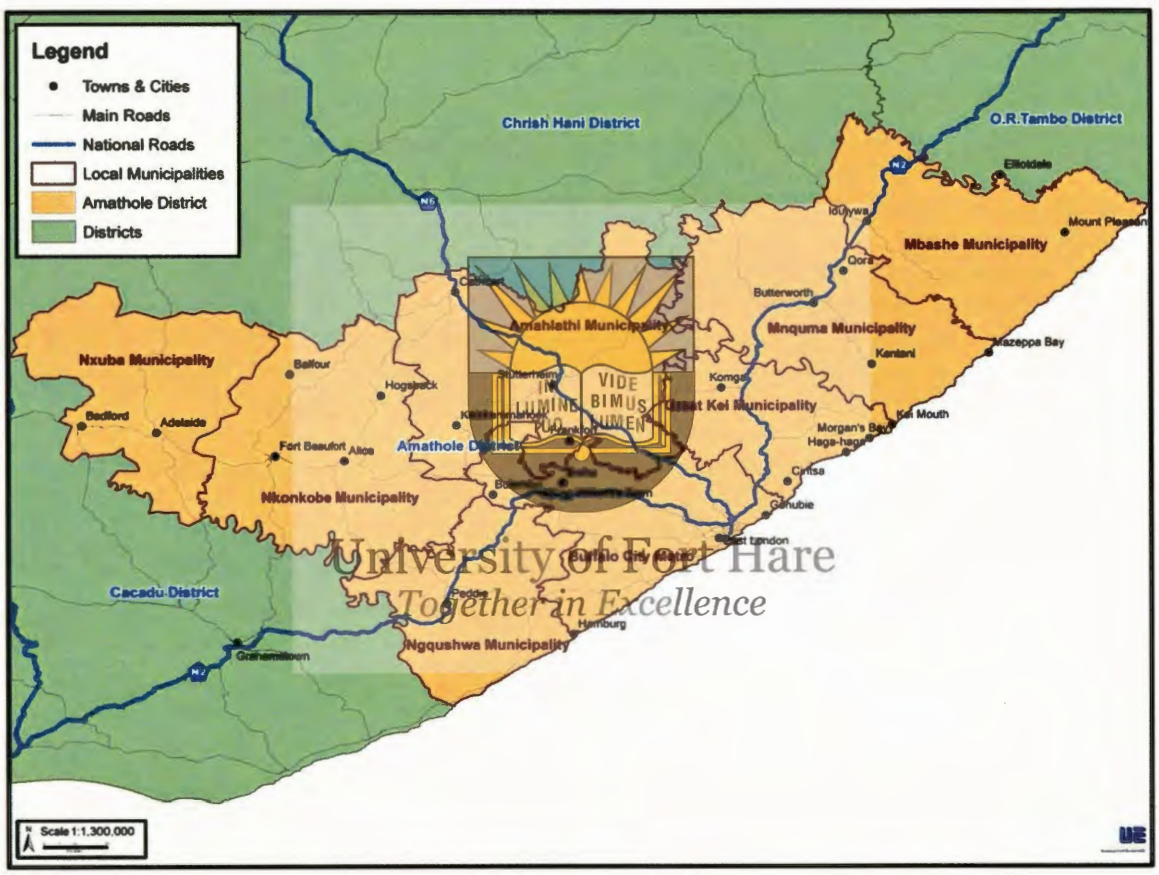
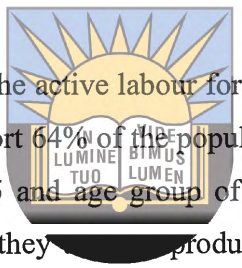


Figure 3.1: The map of Amathole (*Source: McCann, 2005)*

The Amathole District Municipality is said to be a dual economy characterised by a highly urbanised municipality to highly rural municipalities (McCann, 2005). The Buffalo City Municipality for instance is classified as the highly urban municipalities with large budgets and staff, a well developed formal business sector and enterprises that have access to market supplied business services (McCann, 2005). While other municipalities such as the Mbhashe, Mnquma and Ngqushwa are rural and mainly rely on subsistence activities. The remaining municipalities which include Great Kei, Amahlathi, Nkonkobe and Nxuba are classified as small towns, agricultural municipalities, reflecting limited institutional capacity and are characterised by small centres, limited small and medium enterprises (SMMEs) and market opportunities (McCann, 2005). The municipalities are also highly dependent on public

support and Local Economic Development activities that are principally at the level of small projects (McCann, 2005).

The population of the Amathole District Municipality is dominated by females with males constituting a lower proportion of the total population (Amathole District Municipality IDP, 2012). Due to this, there are more female headed families in the district. The Amatole District Municipality currently has a population of children from age 0-14 constituting 34%, while it has a teen and early adulthood population of the age group between 15 – 24 constituting 23% of the total population in all its demographic forms (Amathole District Municipality IDP, 2012). The working population of the age group of 25 – 64 constitutes 36% whilst the older population of 65 and above constitutes 7% of the population (Amathole District Municipality IDP, 2012).



The current age profile implies that the active labour force (25-64) which constitutes 36% of the population has to work and support 64% of the population. This is due to the fact that the age group of 0-14; age group 15-25 and age group of 65 and above are an economically dependent burden in the sense that they [redacted] productive members of the society. As a result, they must be supported by the economically active labour force and the state in the case of old age grant earners. Dependence on the economically active group has got very serious implications for the welfare of inhabitants of Amathole due to high levels of unemployment present in the district (Amathole District Municipality IDP, 2012). In 2010 for instance, unemployment levels were recorded at 45% in the district (Amathole District Municipality IPD, 2012). This therefore means from the 36% active labour force, about half of them are not employed and this even worsens the burden of caring for those who do not work and those who cannot work. As such, most of the people in the district are said to be living below the minimum living threshold, thus there are very high levels of poverty prevalent in the district.

A study by the Amathole District Municipality IDP, (2013) showed that the income levels of most households ranged between R500 to R3500 per month. Thus about 50.3% of the population in the Amathole District earn between R500 and not more than R3500 a month. The study by Amathole District Municipality IDP, (2013) further showed that about 2.1 % of households in the Amathole District earn a monthly income of less than R500. Using the poverty line which is pegged at R174 a month per head, this income group is considered to be ultra poor (McCann, 2005). Whilst this earning category has largely been concentrated, the majority of the workers in this income category cannot afford most of the basic services and

are thus referred to as the "Working Poor" as their monthly income does not stimulate demand (McCann, 2005). Therefore, due to the poverty situation of most households in the district, there has been a substantial need for investment in social and economic infrastructure throughout the district. For instance, the establishment of small economic projects such as the AgriParks projects could bring about improvement in some people's livelihoods if they are kept sustainable. This study, therefore, seeks to assess the potential markets for selected processed vegetables in the district of Amathole considering that the general populace of this district is poor.

3.2 Justification of study areas

3.2.1 Amathole district

To begin with, the Amathole District is the poorest of all districts in the Eastern Cape Province and it is characterised by high levels of unemployment (McCann, 2005). The district is further characterised by high inequalities (some people extremely rich whilst some are extremely poor). As a poor district, the Amatole district was chosen as suitable for a study looking into how the poor could benefit from agricultural activities such agro-processing. This is supported by a study by Hellin *et al.*, (2009), which highlighted the importance of agriculture in enhancing incomes for the poor through sales of agricultural products. Hellin *et al.*, (2009) have argued that the poor could benefit from agricultural activities as long as they are given the support they need to secure formal markets in which they can market their produce thereby improving their welfare through increased incomes.

Further, literature by McCann (2005), has provided that the district is characterised by a dual economy, which is sophisticated, automotive, industrial and is on the other hand also underdeveloped and agriculture based. Therefore, the fact that it is agriculture based possibly means that there is a good opportunity for agricultural projects. Since there are some areas which practice agriculture in the district, there is a cheaper source of vegetables for agro-processors who can then process the vegetable and sell them in non-farming parts of the district. Considering that the sources of vegetables will come from within the district, it therefore means that the prices of the processed vegetables will also be reasonable and affordable. This could mean that, even though the populace of the district is poor, they can still afford to buy the processed vegetables as prices will be low. Demand is thus expected to be higher. Furthermore, the district has an advantage of a good focal point for the administration of goods and services from surrounding areas in he form of the Buffalo city (King Williams' town and East London) . Literature has revealed that Buffalo City is the

most productive municipality in the Amatole District (McCann, 2005). As such, there is a higher possibility that this area offers a good potential market for agro-products which serves as one of the reasons why the Amatole District has been chosen for this study.

According to the South African led network (undated), the district is characterised by high biodiversity. This bio-diversity of the district, which is frequently remarked upon, together with a possible proposition for future socio-economic developments and competitive advantages have made it to be of high importance to the province at large. Thus, this could have a good business potential which could also create good opportunities for emerging processors like the AgriParks. Lastly, in a statement which was given by the district municipality mayor Konza (2012), one of the goals of the municipality was to focus on rural-development programs and ensure food security and economic development by promoting agricultural programs. This goal is in line with that of the AgriParks program and hence it can be concluded that it is worthwhile to choose the district for this study.

3.2.2 Selected study towns

Of all the towns in the Amathole District, Alice, Fort Beaufort, King Williams and East London towns have been purposely selected for the purpose of this study. Alice was purposefully chosen due to its proximity to the processors (AgriParks: Khanyisa cooperative). People in the Alice community offer an immediate potential market for the processed vegetables since they are nearer to the processor. Further, it is simpler to get contact with buyers and also save transport costs since the processors need not to travel long distances to deliver produce. Fort Beaufort was chosen for the vegetable tasting procedure in Spar supermarket. Due to that, some of the vegetables are being sold. This approach was seen as a more convenient method of improving consumer awareness about the vegetables since the sales of the vegetables were currently too low.

King Williams and East London were chosen based on their potential contributions to the economy of the district. These two towns are located in the Buffalo City which is said to be the dominant economic town in the Amathole District. According to the South African Led Network (undated), the Buffalo City accounts for 42% of the district's population, 83% of the district's economic output, and 72% of the district's formal employment. On the face of the statistics alluded to, the city is clearly important to the growth and development fortunes of the district and critical to realising an integrated district growth and development agenda. Further, the vision of the municipality is to ensure that it creates an environment which

enables the fulfilment of people's needs in a safe, healthy and sustainable manner, through promoting local economic development programs which seek to reduce poverty and building communities. According to McCann, (2005) King Williams' town is a focal point for administration, goods and services for surrounding rural and peri-urban areas. As such, it is clear that King Williams town offers a high potential market for the processed vegetables since it is a focal point and people from surrounding villages often come to the town to do their groceries. East London on the other hand, is the Provincial economic centre and the cost of doing business in the area is said to be low (McCann, 2005). Therefore, due to low transaction costs, it offers a greater opportunity for small agro-processors to sell their products at lower prices thereby increasing the potential market for their produce. In addition to this, these two towns are also closer to the AgriParks as compared to other towns in the Buffalo City. These are the reasons why these two were chosen.

3.3 Research methodology

Research methodology explains the manner and the way in which data was collected and analysed. Data is defined as raw information that is collected and processed for use in research (Cooper and Schindler, 2003). The research design, data collection, analysis and reporting of research data should be relevant to answer the research objectives or to address the research problem.

3.3.1 Research design

A research design refers to a plan according to which data is collected to investigate the research hypothesis or the research question in the most economical manner (Huysamen, 1994). On the other hand, Welman *et al.*, (2005) have defined a research design as a plan according to which research participants are obtained and how the information required for the research is acquired from them. Thus the researcher has to explain what he or she is going to do with research participants in order to be able to reach a conclusion about the research problem (Welman *et al.*, 2005). In short, the research design focuses on how the research is going to be conducted. The main purpose of the research design is to allow investigation of appropriate research decisions that should be made so as to increase the validity and reliability of the results.

In this study, the following research techniques were used:

a) Survey technique; and
b) Case study technique.

A survey research technique, attempts to describe and explain the conditions of the present by using many subjects and questionnaires to fully describe a phenomenon (Hofstee, 2006). In this study, structured questionnaires were utilised in collecting data from three categories of potential consumers namely individuals, supermarkets and schools. The case study approach was used to collect data from vegetable processors. According to Hofstee (2006), a case study technique, is a research design approach that examines a single case in a tightly structured way, towards testing a hypothesis about the case itself as well as gaining principles that can be extrapolated to similar cases. In this study, a case study approach was used to capture knowledge on the business operation of three processors with the view of gaining insights on various marketing strategies that can be used by small agro-processors.

3.3.2 Unit of analysis

The unit of analysis for the study was distinguished into the following groups; individuals, supermarkets, schools and processors. Two hundred individuals were interviewed from the four villages that were selected for the purposes of this study. Fifty more individuals were interviewed during the vegetable tasting, 10 supermarkets were selected on the basis of their convenience and the shop managers or section managers were interviewed. In addition to that, 10 schools within a 20km radius of Alice town were purposefully chosen based on whether it was a public school or not and also depending on ease of access due to financial constraints. From the school, the principal and or any educator who is part of the School Nutrition Program were interviewed. From the processors, three vegetable processors were selected and their managers were interviewed.

3.3.3 Sampling frame

The sampling frame is the actual set of units from which a sample has been drawn (Cooper & Schindler, 2006). The study used all potential customers in the Amathole District as its sampling frame. It is from this sampling frame that respondents were selected.

3.3.4 Sampling and sampling procedure

A sample is the part of the population that the researcher actually examines in order to gather information (Cooper & Schindler, 2006). Drawing a sample representative of the actual population reduces the difficulties and costs involved in carrying out the research from the whole population (Cooper & Schindler, 2006).

Convenience sampling and purposive sampling, which are non-probability sampling methods, were used to select 250 individual respondents, 10 schools and 10 supermarkets to be included in this study. The convenience sampling method involves interviewing

respondents at an arbitrary location until the required sample size is met (Bless *et al.,* 2006). Thus, with convenience sampling, subjects of study are selected based on their convenient accessibility. The advantage of using this non-probability sampling procedure (convenience sampling) is that it does not require a population list, something which is difficult to obtain, but it allows interviewing of respondents that are conveniently available. Convenience sampling also allows the gathering of information from a large number of respondents over a short period of time and in an economically efficient manner (Monette *et al.,* 1998). However, it should be noted that this sampling method has a problem of calculating the sampling errors due to the fact that it is non-random. Generalisations based on such samples are risky because the probability of including each sampling unit in the sample is unknown. However, this problem can be overcome by increasing the sample size (Bless *et al.*, 2006). Convenience sampling was used for selecting respondents from three categories of respondents which are 250 individuals, 10 supermarkets, and 3 processors namely Proveg, The Green Bean and The Fruit and Veg City-Food Lovers Market.

On the other hand, purposive sampling was used to select the schools included in the study. Purposive sampling is also known as judgmental sampling and it refers to the deliberate choice of respondents based on some similar characteristics they possess (Tongco 2007). Thus the main goal of purposive sampling is to assist the researcher get the information that he or she requires to best enable him or her to answer his or her research questions. As such, respondents are chosen based on the researcher's judgement. It should therefore be noted that schools chosen for this study are part of public schools which have school nutrition programmes which are financed by the Government (Department of Education). Private schools were excluded from the study due to an absence of Schools Nutrition Programmes.

3.3.5 Data and data collection procedures

Both qualitative and quantitative data were collected for the purpose of this study by means of a structured questionnaire. A total of 10 enumerators were used for the whole process with an average of three enumerators per visit. Since data collection procedures used were different for different respondents due to the broad nature of the study, the data collection procedures will be explained separately for different objectives.

Objective one: To evaluate customers' perceptions about buying processed vegetables

In collecting the data from 50 respondents, a central location test was employed and this involved a vegetables tasting procedure. Central location tests involve conducting tests in one or more often several locations away from the sensory laboratory and are accessible to

public, for example tests, carried out at shopping malls, grocery stores and schools (Resurreccion, 1998). Further, Resurreccion (1998) also pointed out that, a central location test is one of the important tools of for maximizing product acceptance and that they are the frequently used consumer tests especially by those conducting market research. To enable data to be collected from respondents, samples of dried vegetables to be evaluated (spinach, cabbage, carrots and mixed vegetables) were prepared (cooked). The test utilised four interviewers and two assistants from the AgriParks, who helped in explaining the reason of the test and persuaded respondents to take part. As soon as the respondents agreed to take part, they were given a little of each of the vegetable samples to taste and indicate their preferences towards different attributes. The data required included demographic information, important attributes that consumers consider when buying processed vegetables, ratings of various attributes for the vegetables included in the testing procedure such as taste, colour, quality, texture and overall acceptability.

Objective two: To determine factors affecting customers' willingness to purchase processed vegetables.

Individuals, schools and supermarkets

With the help of several enumerators, qualitative and quantitative data was collected from 200 individuals, 10 schools and 10 supermarkets. Structured questionnaires were used to collect the data and the interviewers were the ones who read the questions to the respondents and recorded their responses on the questionnaires. Samples of vegetables were also shown to the respondents and they were allowed to look, touch, smell, and taste the vegetables where necessary. This was done to enable respondents to make decisions based on what they had seen. This also enabled consumers to make comments concerning the vegetables and suggest any recommendations where possible. The data collected included demographic information (for individuals only), socio-economic factors, general information on vegetables and information on AgriParks products and interest in AgriParks products.

Objective 3: To determine and document market penetration strategies that can be used by small vegetable processors

A case study approach with the aid of a structured questionnaire was used to gather data. With the help of one enumerator, processors were interviewed. The duties of the enumerator and the researcher were to record responses and to explain questions to the respondent where they did not understand. The data required included background of the processor, the time frame they had been in business, types of products sold, penetration strategies they used to

gain entry into the market, markets they are serving, strategies that have worked and those that have not worked so well and challenges faced.

Data used for the study

The study used cross sectional data, which is data collected at one point in time (Cooper & Schindler, 2006). All data in this study was collected once. Cross sectional studies offer instant data for the topic under study, unlike when compared to longitudinal studies for which one has to collect data over a long period (Cooper & Schindler, 2006). This therefore saves time and resources (money). These are the reasons why cross sectional data was used for this study.

3.3.6 Research Instrument

The main research instrument that was used to collect primary data for the study was a structured questionnaire. According to Bless *et al.*, (2006), a questionnaire is a set of questions formalised to obtain data from respondents and it enables data to be collected from a large number of respondents over a short period of time. It can either be structured or unstructured. The questionnaire consisted [illegible]pen and closed ended questions as well as scale and likert-scale questions. Closed ended questions are appropriate where more than two alternative responses are needed and open-ended questions give respondents room to explain the answers and give more detailed information (Cooper & Schindler, 2003). Self-administered questionnaires were used for the data collection in which the interviewer read, explained the questions to the respondent and recorded the responses on the questionnaire. A self administered questionnaire was favoured due to the fact that it reduces bias which may arise due to misinterpretation of questions by respondents. It was also favoured to cater for illiterate respondents and also to save time.

3.4. Data analysis

Data analysis is a practice in which raw data is regimented and organised so that useful information can be extracted from it (Norusis, 2004). The analysis comprises five steps, including validation, coding, data transcribing, data entry and data cleaning. Data was run using the Statistical Package for Social Scientists (SPSS) version 22.0. Microsoft excel was also used as an analytic tool. Table 3.2 shows the objectives, research questions and hypotheses of the study and how each objective was analysed.

Table 3.1: Objectives of the study and how they were analysed

Objective	Hypothesis	Analytic tool

To evaluate customer's perceptions about different processed vegetables.	Customers have a positive perception towards processed vegetables.	Descriptive statistics
To determine factors which affect customers' willingness to purchase processed vegetables	Socio-economic factors affect customers' decisions to purchase value-added vegetables	Descriptive statistics & Binary logistic regression model
To determine market penetration strategies that can be used by small agro-processors to successfully market their produce	Small agro-processing firms have limited access to output markets.	Descriptive statistics

3.4.1Objective 1: To evaluate customers' perceptions on different processed vegetables

Evaluation of alternatives is one of the most important stages in models of consumer purchasing behaviour according to Ressurreccion (1998). Thus, allowing consumers to evaluate different products will enable them to develop attraction towards the products depending on how convincing those produ[illegible]nd this leads to preference formation. For instance, if a consumer perceives that the product is good or has a positive perception towards the product, the consumer is likely to like that product. Therefore, knowing customers' perceptions is important in assessing the potential market for processed vegetables as it helps to tell whether or not consumers like the vegetables. One way to understand consumer perceptions is through sensory evaluation which involves taking in sensory information such as touch, taste and smell and make it into something meaningful (Ressurreccion, 1998). As such, in order to be able to evaluate customers' perceptions in this study, a vegetable tasting procedure was done in Fort Beaufort town in front of Spar Supermarket. The procedure targeted customers who were coming for shopping at the Spar supermarket and passersby.

The idea of carrying out the vegetable tasting procedure was adopted from Food Processing Center Institute of Agriculture and Natural Resources (2002) which carried out a market test for value-added chestnut products. The goal of the market test was to evaluate the level of interest of chefs in various restaurants in locally produced, value-added chestnut products. According to the Food Processing Center Institute of Agriculture and Natural Resources, (2002), this market test was not intended to provide data that could, using statistical analysis be generalised to determine the size of the food service market the for value-added chestnut products but instead, it was designed to assess their potential in individual upscale markets. The survey on the restaurants sought to identify the attributes chefs deem important when

sourcing food products and the perceived value of having a chestnut item on their menu. It also sought to determine the quality of chestnut samples and chefs purchasing intentions should each of the sampled chestnut products become available for sale. The results from the market test showed that chefs considered product quality and taste as the most important attributes when evaluating a product. The results also showed that the chestnut products were chosen based on a variety of uses. Lastly, the results also showed that some restaurants were at that time not buying any chestnuts products due to insufficient knowledge about them.

The current study's objective of carrying out a vegetable tasting procedure was to enable evaluation of consumer perceptions about selected processed vegetables. The nature of the questions enabled identification of important factors that consumers consider when making decisions to purchase processed vegetables. It also helped to determine the vegetable attributes that consumers liked about the vegetables that were given to them for tasting thereby concluding on whether or not they had a positive or negative perception about the vegetable products. Knowing the perceptions of the consumers gives an indication as to whether or not there can be a potential market for the processed vegetables. These objectives are similar to those of the study by the [illegible]ssing Center Institute of Agriculture and Natural Resources and this is the reason as to why this method of data collection was selected.

Vegetable tasting procedure

Preparation of samples for tasting

The first step in the vegetable tasting procedure was sample preparation. Dry vegetable samples included in the procedure were cabbage, spinach, carrots and mixed vegetables (cabbage, spinach and carrots). In preparing the vegetables, the vegetables were first soaked in warm water for 30 minutes to ensure that there were soft enough to reduce boiling time. Whilst boiling cooking oil, aromat, salt and curry were added in all the samples to ensure uniformity. The vegetables were prepared at the main kitchen at the AgriParks and cooked samples were taken to Fort Beaufort Spar Supermarket for tasting.

With the help of five assistants' two ladies from the AgriParks and three students, potential customers were approached and asked if they could participate in the test. The reasons for the test were clearly stated out and the major reason was that we wanted to know customers' perceptions towards the given vegetables' attributes. The vegetable attributes that were assessed included taste or flavour, colour, packaging, texture, appearance and overall acceptability. Individuals were asked to rate their interest on a 5-point scale. As has been

mentioned above that the goal of the vegetable tasting procedure was to help in determining the customers' perceptions towards processed vegetables given to them for evaluation, this is important in showing the interest of consumers towards the vegetables. In as much as this can enable the producer to know whether or not his or her products are wanted in the market, this cannot be enough in making a decision of whether or not to produce the products. This is due to the fact that, it is possible for one to like a product, but be limited by other factors such as socio- economic factors from buying the product. Therefore, it is necessary that processors also put into consideration these factors before making production decisions.

3.4.2 Objective 2: To determine socio-economic factors that affect consumers' willingness to buy processed vegetables

In order to determine socio-economic factors that influence consumers' willingness to buy processed vegetables, both the descriptive and binary logistic regression model were used. Socio-economic factors refer to social and economic factors that can affect consumers' decision making in buying processed vegetables. Descriptive statistics, which include tables, graphs and pie charts was used to present results from the survey that was done in four villages within 20 km radius of Alice town.

On analyzing the socio-economic factors that affect customers willingness to buy value added vegetables, the study made use of the binary regression model which determines how predictor variables X, are related to a dichotomous response variable Y. In this case, the willingness to buy is the dichotomous dependent variable. The dependent variable takes two categories that is willingness to buy and not willing to buy and these were coded as Y=1 and Y=0 respectively.

Binary logistic regression model

The goal of logistic regression is to find the best fitting model to describe the relationship between the dichotomous characteristic of interest (dependent variable = response or outcome variable) and a set of independent (predictor or explanatory) variables. Logistic regression generates the coefficients of a formula to predict a logit transformation of the probability of the presence of the characteristic of interest (MedCalc, Undated). The binary logistic regression model is useful in analysing data where the researcher is interested in finding the likelihood of a certain event occurring. In other words, using data from relevant independent variables, binary logistic regression is used to predict the probability (p) of occurrence, not necessarily getting a numerical value for a dependent variable (Gujarati, 2004).

Predictor variables

The predictor variables are gender, marital status, household size, own production of vegetables, home preservation of vegetables, personality, environment, quality of the vegetables, variety of vegetables, price of the vegetables, packaging of vegetables, consumer attitudes towards processed vegetables.

The following binary regression equation was used and has been adopted from Kolady and Lesser (2006) and modified a bit to suit the current study.

Logit (Pi) = ln(Pi / 1 – Pi) = $\beta_0 + \beta_1 X_1 + ... + \beta nXn + U_t$ 1

ln(Pi / 1 – Pi) = logit for vegetable choice (processed and non-processed).

Pi = willingness to buy

1 - Pi = not willing to buy

β_1= coefficient

β_0=intercept

X represents independent variables

Ut = error term

Substituting the 12 variables the equation will be as follows;

$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + U_t$.....2

Y is the dependent variable.

The Rationale for selecting a binary logistic regression model

Several methods can be used to explain the relationship between dependent and independent variables. Such methods include linear regression models, probit analysis, log-linear regression and discriminant analysis (Mohammed and Ortmann, 2005). However, binary logistic regression was chosen because it has more advantages, especially when dealing with qualitative dependent variables and when the dependent variable has two categories. Kolady and Lesser, (2006) states that linear regression model is one of the widely used methods and which has been successfully applied in most studies. Gujarati (2004) however, pointed out that whilst linear regression was that useful, its usefulness was basically in the analysis of quantitative data, but when it came to analyses of qualitative data it created some problems. One of the problems is that it can violate the fact that the probability has to lie between 0 and 1, if there are no restrictions on the values of the independent variables. It is for this reason why the binary regression model was selected for this study since the data to be analysed will

be qualitative in nature and that it guarantees that probabilities estimated from the logit model will always lie within the logical bounds of 0 and 1 (Gujarati, 2004).

Description of variables included in the model

GENDER- it is expected that gender and willingness to buy will have a negative relationship. It is expected that more males will be more willing to buy processed vegetables since they are ready to use, unlike unprocessed ones which need time to prepare. For example, with butternuts one has to first peel off the outer part before cooking it and this usually takes time but if someone buys a processed one, the vegetable will be ready for cooking.

HIGHEST LEVEL OF EDUCATION- According to a study by Bihan *et al.*, (2010) consumption of vegetables was found to be low among less educated respondents. Therefore, it is expected that increase in education levels of respondents will have a positive relationship with willingness to buy.

HOUSEHOLD SIZE- Households with lesser members are most expected to be more willing to buy processed vegetables. This is due to that households with more family members will often find it more economical to buy unprocessed vegetables.

OWN PRODUCTION- Individuals who produce vegetables in their home are expected to be less willing to buy processed vegetables. This is due to that they have a cheaper source of vegetables and sometimes they have these vegetables during most times of the year. Therefore in as much as they would want to buy processed vegetables, this could be seen as a waste of money since they already have vegetables.

HOME PRESERVATION- preservation of vegetables at home is expected to have a negative impact on willingness of customers to buy processed vegetables. The main reason for preserving vegetables is for future consumption. Hence, whether or not processed vegetables are bought for their convenience in usage or because they last longer in case of dried ones, for someone who preserves their own vegetables at home, it is quite difficult for them to be willing to buy the processed vegetables as long as they still have their own.

PERSONALITY- Personality is the set of traits and specific characteristics of each individual and it often influences decisions and buying behaviour of an individual (Perreau, 2013). Therefore, ones' personality is expected to have a positive or negative impact towards willingness to buy processed vegetables. In the village survey, respondents were asked to confirm whether or not their personality influenced their willingness to buy processed vegetables by choosing, Yes if personality influenced their choices and No if otherwise.

ENVIRONMENT- A person's environment which comprises of his or her cultural, social and family environment has the ability to influence what the person buys. And as such individuals often tend to make purchasing decisions depending upon their surrounding environment. Hence a person's environment is expected to have a positive or negative impact towards willingness to buy processed vegetables. Village respondents were asked to indicate whether or not the environment they lived in had any influences towards their choices of vegetables. If the environment had an influence, the response was Yes and No if otherwise.

QUALITY OF PRODUCTS- It is expected that the higher the quality of the products the more willing individuals will be willing to purchase processed vegetables. The quality of vegetables was measured at three levels represented by 0; 1; 2, with 0= low quality, 1= average quality and 2= good quality. Respondents were asked to rate the quality of the vegetables based on the samples that were presented to them.

VARIETY OF PRODUCTS- Most individuals like to purchase vegetables from a location where there is a wide range of vegetables (Simonne *et al.*, 2006). Therefore, it is expected that the wider the range of vegetables offered the more willing consumers will be to purchase processed vegetables from that specific seller. This is due to that most consumers like to do their shopping at one place, hence it could advantageously if the processor offers various vegetable types as this could attract more customers.

PRICES OF PRODUCTS- The price of a product have an influence on the willingness of buyers. According to the law of demand, as prices go up the quantity demanded decreases. As a result, it is expected that the higher the prices of the products will be, the less willing buyers will be to buy processed vegetables and vice-versa.

PRODUCT PACKAGING- A product package may attract customers to buy it. Therefore, it is always good to package products well as this would improve willingness of consumers to buy the products, especially to those individuals who are concerned about packaging.

ATTITUDE- The attitude of someone over a product can influence their willingness to buy processed vegetables. A positive attitude is expected to have a positive impact on the willingness of buyers to buy processed vegetables. In the village survey that was conducted, respondents were asked to indicate their attitude towards the processed vegetables that were presented to them. Attitude of respondents was rated on three scales which include positive, neutral and negative. It was rated positive if the respondent had an interest towards the vegetables, neutral, if the respondent was not sure if they liked the vegetables or not and

negative, if the respondent did not like the vegetables at all. The following Table 3.2 summarises the variables that were used in the model and the expected signs.

Table 3.2: Definition and units of measurements of key variables modelled

Dependent variable	**Variable description**	**Expected Sign**
Willingness to buy	Customers willing to buy processed vegetables. Code 1 if the customer is willing to buy and 0 if otherwise.	+/-
Independent Variable name	**Variable description**	**Sign**
Gender X_1	The gender of the respondent (male=0 female =1)	-
Level of education X_2	Consumption of processed vegetables increases with level of education	+
Household size X_3	Households with lesser members are more likely to buy processed vegetables	+
Own production X_4	Does the respondent produce vegetables at home (Yes= 1; No=0)	-
Home preservation X_5	Does the respondent preserve vegetables at home (Yes=1; No=0)	-
Personality X_6	The personality of a person can influence willingness to buy processed vegetables (Yes=1; No=0)	+/-
Environment X_7	The environment in which an individual stays influences their choice of vegetables they buy (1=yes; 0=No)	+/
Quality of products X_8	The higher the quality of product the more willing consumers will be to purchase it	+
Variety of products X_9	The more variety of the processed vegetables are being sold the more willing will be consumers to buy	+
Price of products X_{10}	The lower the price, the more willing consumers will be to buy the processed vegetables	+
Product packaging X_{11}	Good packaging increases the willingness of consumers to buy	+
Attitude X_{12}	Positive attitude towards processed vegetables increases willingness to buy	+

3.4.3 Objective 3: To determine and document market penetration strategies that can be used by small vegetable processors to successfully market their produce.

The aim of this objective was to determine market penetration strategies that can be used by small agro-processors to successfully penetrate into various markets. It is important to equip small agro-processors with knowledge about the various ways of penetrating into a market

and how to maintain their positions in the market. Thus, after having known about consumers' perceptions and factors that influence their willingness to buy, it is therefore important to know how to then go about marketing their products to these various markets.

In order to be able to analyse this objective, descriptive statistics was used. Qualitative data was collected by means of a structured questionnaire using a case study approach. Three processors in King Williams and East London were identified and interviewed and these included the Proveg, The Green Bean and The Fruit and Veg City-Food Lovers Market. Thereafter, an analysis of the market penetration strategies that have been used to gain entry and remain successful in business by the three identified processors was done. The aim behind using this case study approach was to determine the penetration strategies that have been used by other businesses to successfully gain entry into business and to draw lessons from them. The approach used in this study was adopted from a study which was done by Gooch *et al.,* (2006). The topic of the study was entitled ''assessment of the opportunities for marketing of non GM PEI agricultural products''. The aim of doing a case study approach in the study by Gooch *et al.*, (2006) was to develop an understanding of preferred market penetration strategies that could be used by producers. The case study that was done in the current study was structured as follows:

The first stage concentrated on case introduction where the specific processor gave a description of the products sold, information about the organisation, the market served and the time frame that the product has penetrated the market. The second stage was about the rationale that is giving a description of the reasons as to why the processors chose to market those specific products, for example, for value-added reasons such as to get more money or to satisfy the consumer demands. The next step looked at the strategies that have been used in marketing. This discussion on strategies looked at what the processors did to differentiate their products, how they gained access to the product markets and the logistics of the penetration strategy. In the penultimate step, the processors were asked to elaborate on any challenges that they faced during the implementation and early stages of market penetration. Lastly, the processor was asked to indicate how they managed to survive even in the face of various challenges associated with business and hence give the current situation of the business.

Ethical considerations

1. Informed consent where the interviewer explained to the respondent what the research is all about, the risks and benefits involved and the right to decline participation.

Cooperation of respondents was gained by using official permission and support such as village authorities.

2. Privacy and confidentiality: privacy, where one has the ability to control when and under what conditions others will have access to one's beliefs, attitudes and behaviour. Confidentiality where particular information from respondents was not to be publicly linked with information from other participants in the same study.

3. Scientific fraud and misconduct which obliges the interviewer not to report fladulent results or deliberately misrepresent data in a deceptive manner.

3.5 Concluding remarks

This chapter looked at the description of the study area in which the research was conducted as well as the research methodology. It gave an overview of the study area and the reasons as to why this area was preferred for the study. It also presented the methodologies that were employed in the study for data collection and data analysis and the ethical considerations. The following chapter presents results of the vegetable tasting survey that was conducted in Fort Beaufort at Spar Supermarket.

CHAPTER 4: RESULTS FROM VILLAGES, SUPERMARKETS AND SCHOOLS SURVEYS

4.0. Introduction

This chapter gives the results of the surveys that were carried out in the four villages within a 20 km radius of Alice town, supermarkets and schools. The results are presented in four sections. The first section, (4.1), presents descriptive statistics results from the village survey. Section 4.2 presents results on the binary logistic regression model that was formulated in chapter three to determine significant factors that affect consumers' willingness to buy processed vegetables. The third section, (4.3), presents results from the supermarkets survey and lastly, section 4.4 which presents results from the schools survey.

4.1 Descriptive statistics results from the village survey

4.1.1 Gender

Of the 200 respondents that were interviewed, 78% (156 out of 200) of them were females, whilst 22% (44 out of 200) of them were males. These results were favourable for the study since women are the ones who do most [illegible] chasing and even where they are not the ones going for shopping, they are usually the ones who draw food budgets. In addition to that, it is reported that vegetable consumption is higher among females than males (Deshmukh-Taskar, 2007). As such, having more females in the study could probably mean a great market potential for the processed vegetables.

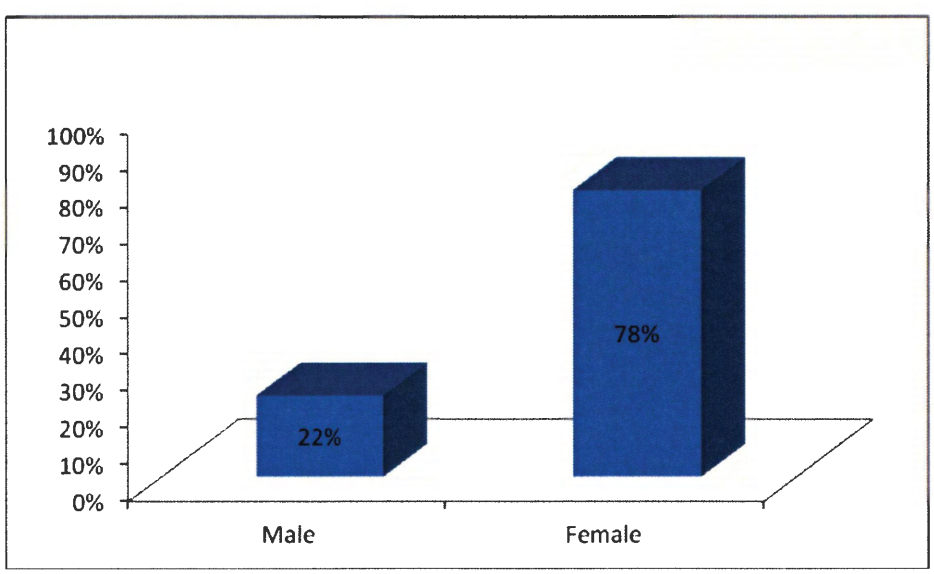


Figure 4.1.1: Distribution of respondents by gender

4.1.2 Age of respondents

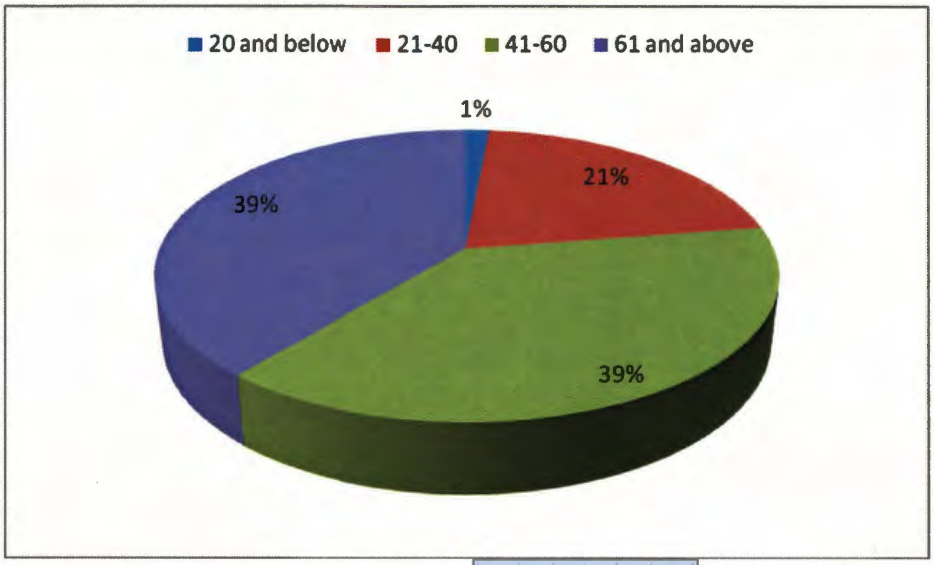


Figure 4.1.2: Distribution of respondents by age

The results from the village survey as shown in Figure 4.2 above, showed that most of the respondents interviewed were between the age groups of 41- 60 and 61 and above. There were equal respondents from age groups 41-60 and 61 and above as are represented by 39% each. Age groups 21-40 and 20 and below had 21% and 1% respondents respectively. Age groups of 21-40 and 41-60 both fall under the economic active group and these groups all together were represented by 60% of the respondents. Having 60% of the respondents being economically active would suggest a potential market for the processed vegetables since they have the ability to work and get incomes with which they can purchase the processed vegetables. A study by Plessz and Gojard, (2012) has indicated that purchases of processed vegetables did not depend on age of respondents. However, at the same time, consumption of fresh vegetables was said to increase with an increase in age. Therefore, this means that the market for processed vegetables is open to any age group and thus it offers a wide potential market for them. On the other hand, the seller should be able to know the preferences of its customers with respect to the types of vegetables preferred. For example, older people as was stated by Plessz and Gojard (2012) prefer fresh vegetables; it would be wise for the seller to sell them fresh processed vegetables in order to meet their need.

4.1.3 Marital status

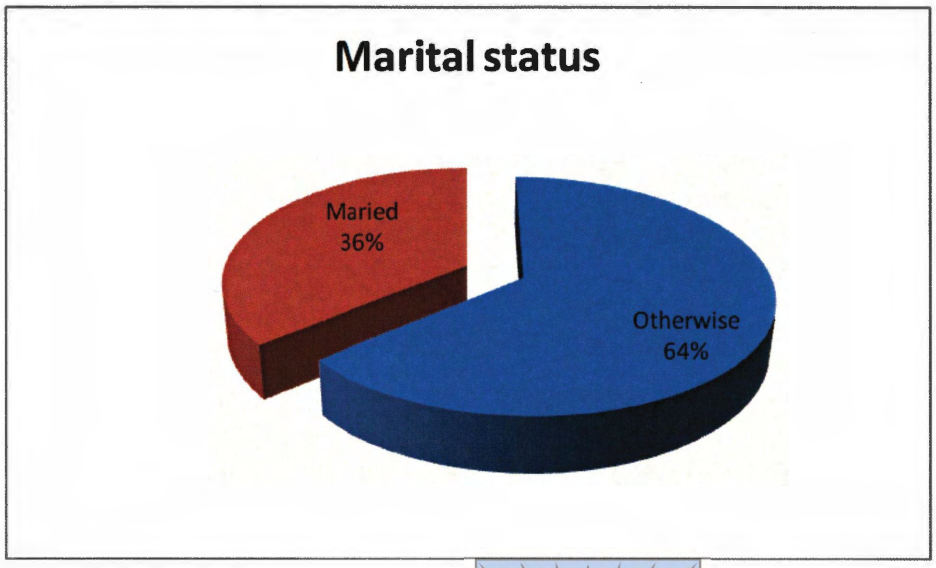


Figure 4.1.3: Distribution of respondents with respect to marital status

The marital status was grouped into two categories which are married or otherwise as shown in the Figure 4.1.3 above. People in the same category usually have similar consumption or behavioural patterns and it is on this assumption that this grouping of respondents into the two groups (married or otherwise) was done. The otherwise category comprised of those respondents who are single (with or without children), widowed and divorced respondents. The results of the study showed that most of the respondents, 64% of them fell into the otherwise category and only a few of them 36% were married.

4.1.4 Household size

The household size was categorized into three groups which include household members five and below which was considered to be small households. The second category comprised of six to ten members and this was considered to be medium sized households. Lastly 11 and above, which was considered to be large households. Figure 4.1.4 shows the results of the village survey that was conducted in the four villages.

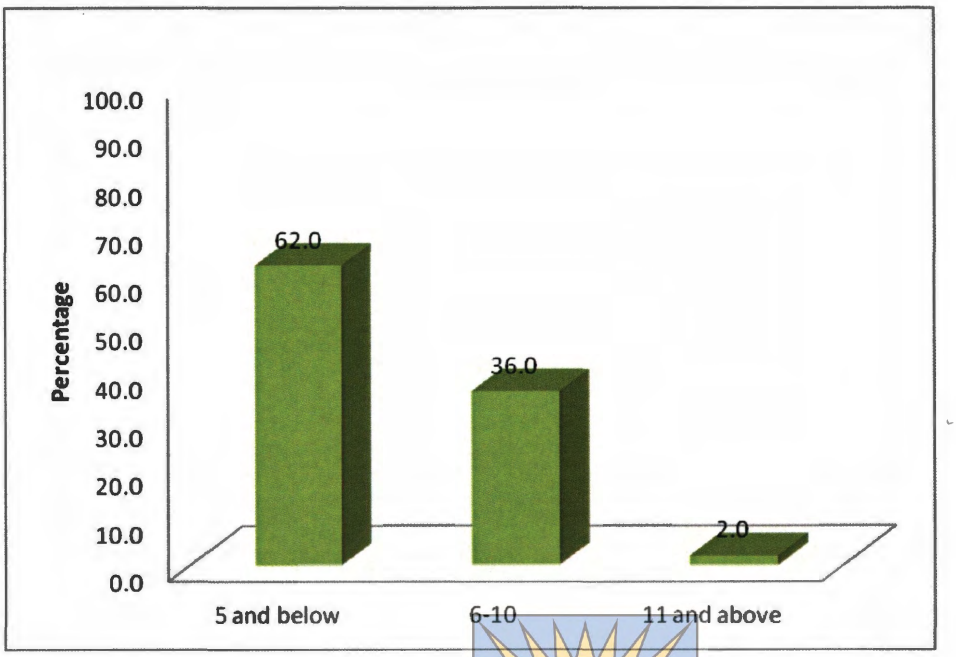


Figure 4.1.4: Distribution of respondents by household size

The results of the study show that the majority of the respondents, 62% of them were from small households. Thirty-six percent of the respondents were from medium size households and the minority 2% of them were from households with eleven members and above (large households). It is of rational belief that processed vegetables are most favourable to households with fewer members due to the fact that the prices for processed vegetables are higher. Individuals as rational consumers would prefer to buy in bulk to save money and at the same time buy quantities that are enough for larger households. Therefore, households with fewer members would be in a better position to buy processed vegetables other than those that are many. For instance, some of the processed vegetables (dry) are sold in 50g and 100g packets and some respondents were not satisfied with these small packets as the question that often aroused was "how many people can feed from such a small packets?" Therefore, this showed that smaller households were in a better position to buy processed vegetables.

4.1.5 Level of education

There are basically three levels of education that a person can pass through in his or her life. The first level, primary education is the lowest of all the levels. The second level, which is secondary education or matric as known in South Africa is an advanced level which, if completed can see someone being employed albeit in low paying jobs. The tertiary level is the highest level which, if completed could lead to one being employed in better paying jobs. The respondents were asked to note their highest level of education. The results of the survey are shown in the Figure 4.1.5 below.

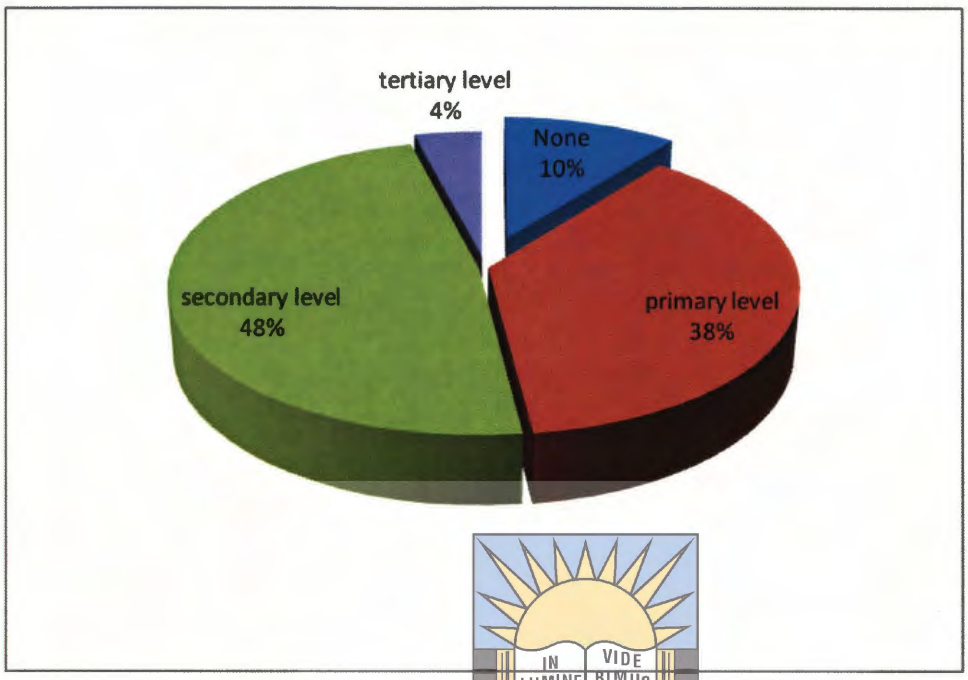


Figure 4.1.5: Distribution of respondents by level of education

From the village survey that was conducted, 10% of the respondents indicated that they did not attend school at all. Thirty-eight percent of them had primary education. Forty-eight of the respondents went up to secondary school and 4% of the respondents had gone up to tertiary level. Lack of knowledge or low levels of education can have serious implications towards consumption of processed vegetables. For instance, studies by Srinivasan and Elangovan (2000); Ragaert (2004) and Deshmukh-Taskar (2007), revealed that consumption of processed vegetables is common among better-educated individuals unlike in less educated ones. Since there were over half (52%) of the respondents with secondary and tertiary education, it was expected that these individuals understand better about the convenience of processed vegetables and hence would be willing to buy them.

4.1.6 Own production of vegetables at home

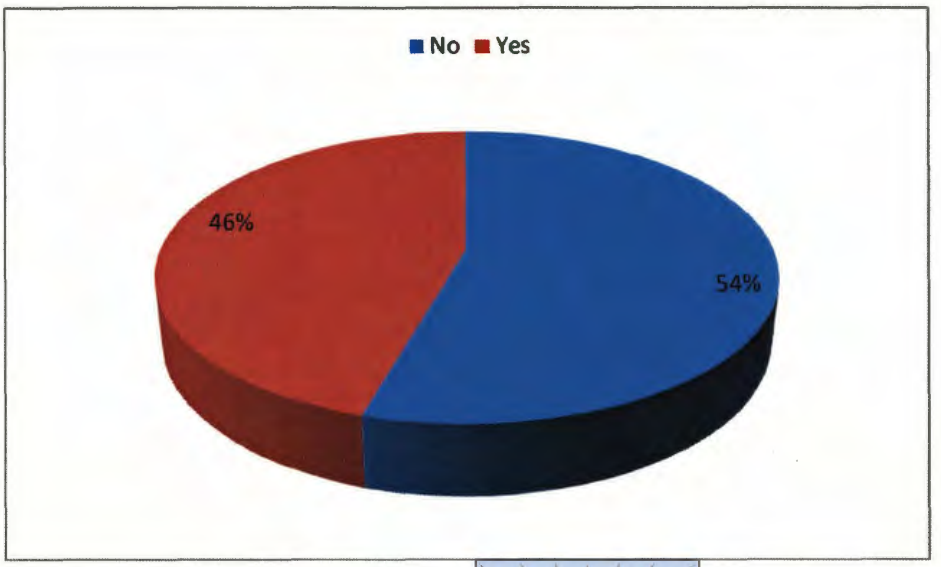


Figure 4.1.6: Distribution of respondents by production of vegetables at home

Fifty-four percent of the respondents that were interviewed indicated that they produced one or more vegetables in their homes. The vegetables produced included onions, carrots, spinach, cabbage, beet-root and potatoes. Forty-six percent of the respondents, however, indicated that they do not produce any vegetables, hence relied on purchased vegetables for consumption in their homes. As a result, it is expected that these (46%) who do not produce should be more willing to buy processed vegetables since they can be more convenient for them. It should also be noted that most of those who indicated that they produce their own vegetables did not produce vegetables throughout the year due to problems of water and seasonal factors. Further, the scales of production in most cases are not enough to sustain year round home consumption. Therefore, even those who produce also have to buy some of the vegetables to sustain daily home consumption.

Whilst it is expected that those who produce can be less willing to buy processed vegetables since they may consider them expensive because they have a free source of vegetables in their homes, these people too are potential customers. This is due to the fact that, they do not have vegetables in their homes throughout the year and even when they have, they may not have enough due to low levels of production. Further, they do not produce all types of vegetables in their homes hence they have to buy the ones they do not produce.

4.1.7 Access to fresh vegetables throughout the year

Respondents were asked to indicate whether they had access to fresh vegetables throughout the year. The results of this question were seen to be useful as they would give insight as to whether there could be a market for dry vegetables in particular and also to show which

processed vegetable type (fresh or dried) could be better to supply to these people. The results of the study are shown below.

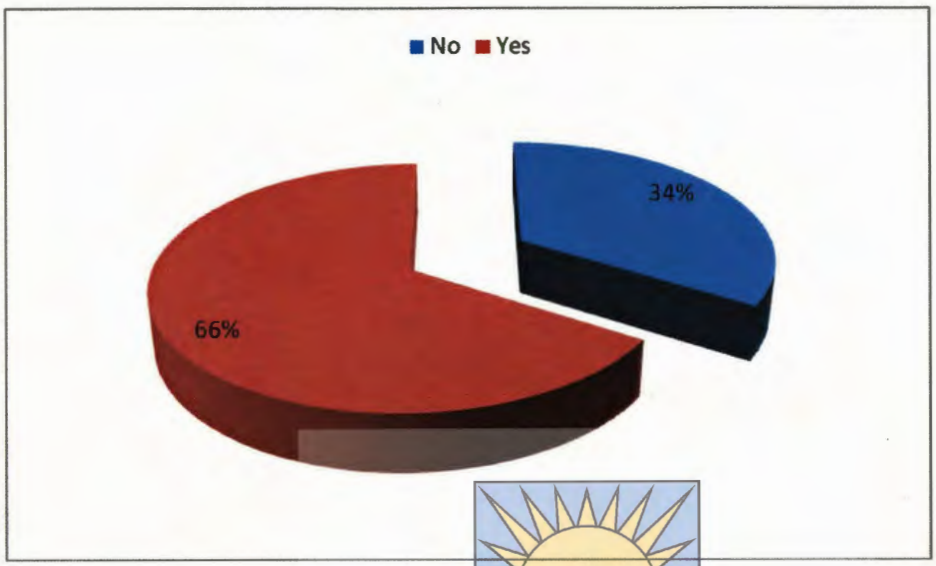


Figure 4.1.7 Distribution of respondents with respect to whether they have access to fresh vegetables throughout the year

As shown in Figure 4.1.7 above, 66% of the respondents indicated that they had access to fresh vegetables throughout the year whilst 34% of them lacked access to fresh vegetables throughout the year. For those who lacked access to fresh vegetables throughout the year, some of them indicated that it was hard for them to get fresh vegetables especially during the dry seasons. For example, most households doing vegetable farming in their homes indicated that there were constrained by water shortages to do their gardening. Hence it was found that during dry seasons, they are not able to produce. Some indicated that lack of income was the most notable constraint to access to fresh vegetables throughout the year. It was indicated that this was especially common towards each month end.

These results show that there can be probably a market for both fresh processed and dried vegetables. This is based on reasons that some respondents indicated that they had no access to fresh processed vegetables throughout the year hence processors can sell to these people as long as they are convinced with their products. On the other hand, dried vegetables can be ideal for those individuals who face vegetable shortages towards the end of the month. This is because this can enable the consumers to buy large quantities of vegetables when they get their income without fear of losses due to the perishable nature of vegetables.

4.1.8 Preservation of vegetables at home

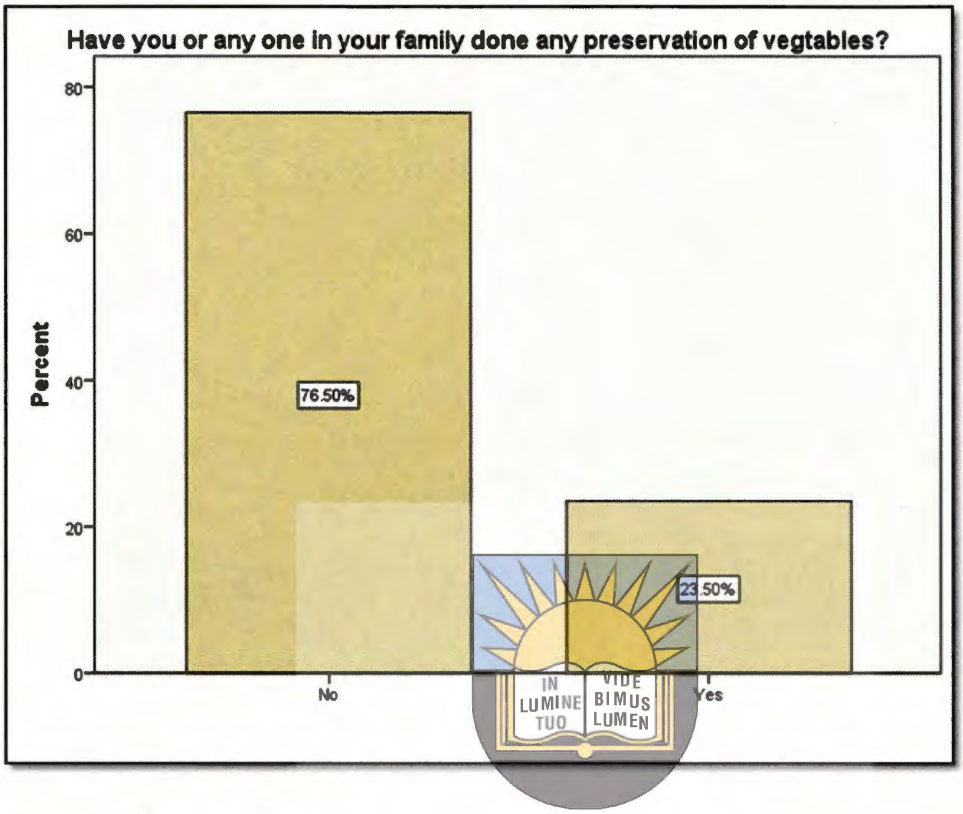


Figure 4.1.8: Distribution of respondents by whether they do vegetable preservation at home

Respondents were asked to indicate whether they do any vegetable preservation in their homes and it was established that 76.5 % of them had not done any preservation of vegetables as shown in Figure 4.1.8. Instead, respondents said that they fetch their vegetables from the garden when they want to consume them and when it is too much they sell or give to neighbours for free. In contrast, 23% indicated that they did vegetable preservation, especially for cabbage, beet-root, tomatoes and potatoes. Respondents doing vegetable preservation, noted different ways of preserving these vegetables such as putting the vegetables on a mat in a cold place, placing the vegetables in a bin, keeping the vegetables under a shed and making a hole in the ground and putting the vegetables inside. Whilst these preservation methods may seem different, all of them kept the vegetables fresh for a period of not more than one month. This therefore implies that, even though some people may produce their own vegetables, they can only consume the vegetables over a limited period of time less than one month. As a result, they have to buy vegetables when they need them. This means that even those doing home preservations are potential customers for processing vegetables, although their potential is limited to times when they do not have their own vegetables.

4.1.9 Willingness to buy processed vegetables

The results of the village survey revealed that, of the 200 villagers that were interviewed 150 (75%) of them as shown in the Figure 4.1.9 below indicated that they were willing to buy processed vegetables. The remainder, 50 (25%) of them indicated that they were not willing to buy the processed vegetables. The results of the village survey suggest that there is a great market potential for the processed vegetables since the majority of the respondents were interested in buying them.

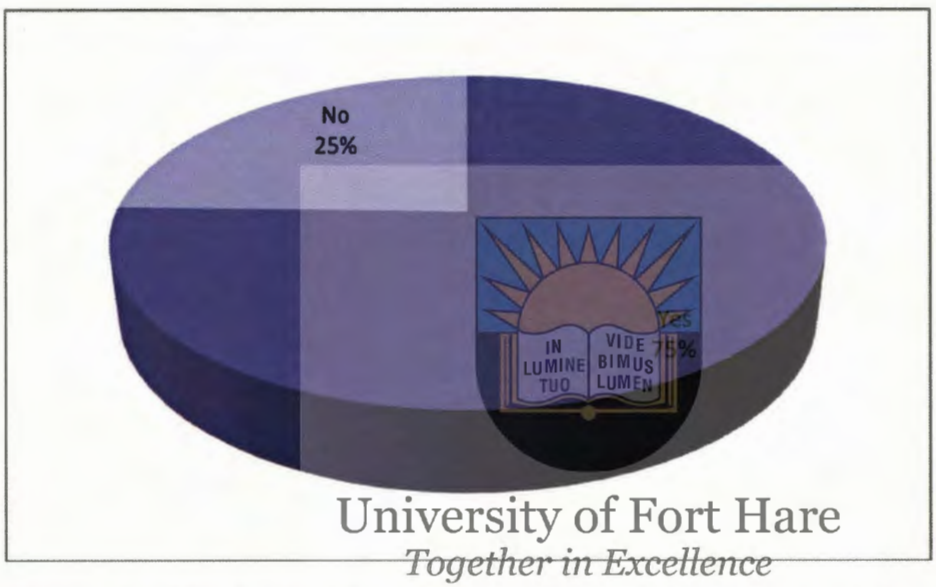


Figure 4.1.9: Distribution of respondents with respect to willingness to buy

4.1.10 Personality

Of the 200 village respondents included in this study, 105 respondents as shown in Figure 4.1.10 indicated that their personality influenced the type of vegetable they chose to buy. However, 95 out of the 200 respondents indicated that their personality did not influence their vegetable choices. Depending on the type of status that the person wants of him or herself, the personality of a person has the ability to influence the type of products they buy (Perner, 2008). As such, ones' personality can either negatively or positively influence their willingness to buy processed vegetables. For instance, of the 105 village respondents who indicated that personality positively influences their choice of vegetables, the potential market for the vegetables will be higher. However, if their personality negatively influences them, it means the potential market for the processed vegetables will be smaller since these people will be less willing to buy the processed vegetables. For those who indicated that personality does not influence their vegetable choices, it therefore, meant that the size of the potential market is independent of their personality.

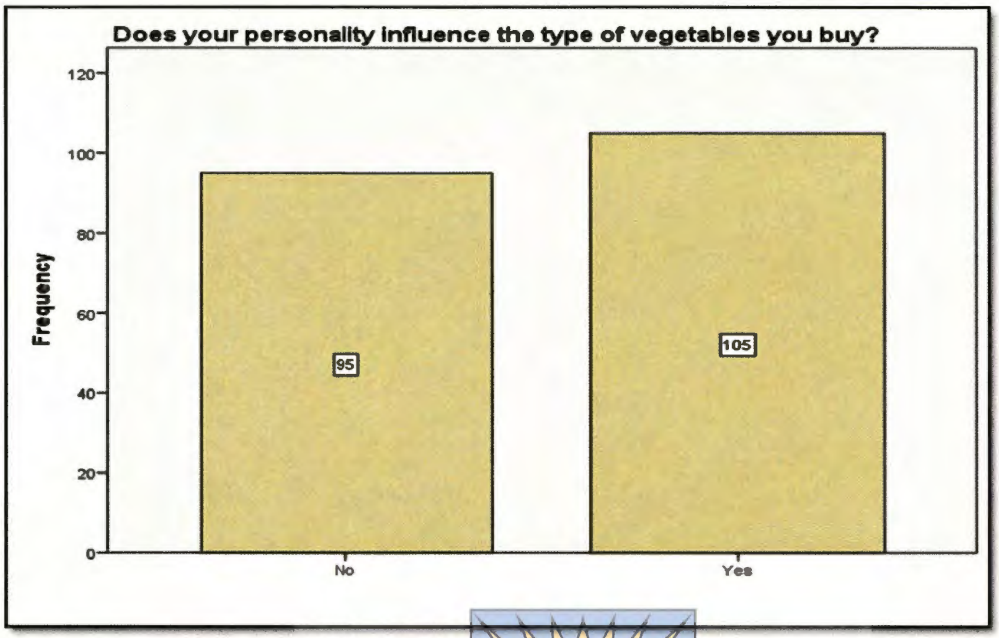


Figure 4.1.10: Distribution of respondents with respect to personality influences

4.1.11Environmental influences

It is believed that consumers imitate others whom they admire when making decisions of what to buy (Perner, 2008). As such the social, economic and cultural environment of a person has the ability to positively or negatively influence him or her to buy certain types of vegetables. That is, it can either make the person to be willing or not willing to buy processed vegetables in this case. In this study respondents were asked to give their views on whether or not the environment they lived in has influence on the type of vegetables they bought. The results of the study are illustrated in the Figure 4.1.11 below.

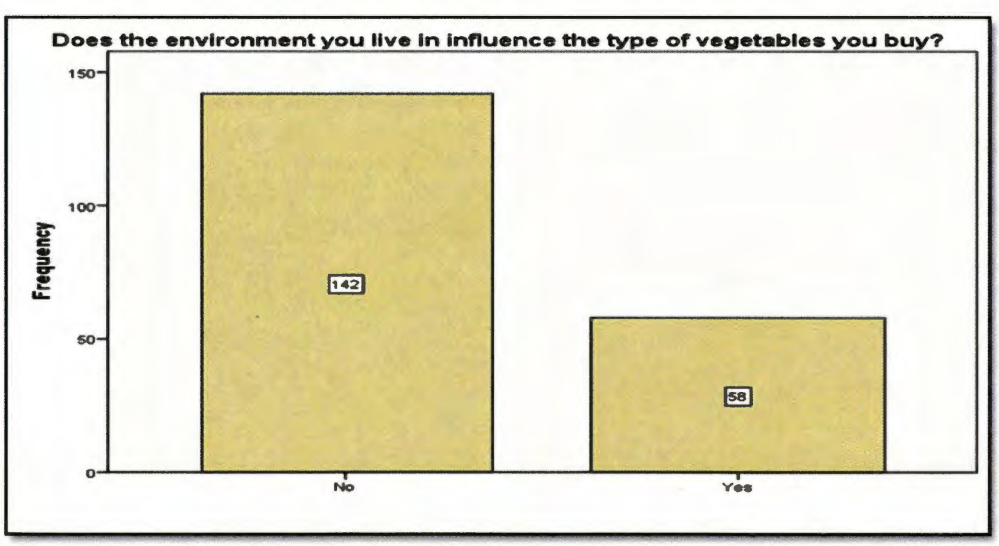


Figure 4.1.11: Distribution of respondents with respect to environmental influences

The results of the village survey showed that most respondents were not influenced by the environment to buy processed vegetables. This group of respondents included 142 respondents out of 200 (71%). For these villagers, it therefore means that the environment they live in has nothing to do with their choices. Thus, their vegetable choices are independent of their social, economic and environmental influences. However, some of the respondents 58 (29%) noted that the environment they lived in, had an influence over their purchasing decisions. Therefore, this means that, the social, economic and cultural environment of the individual has an influence on the type of vegetables they buy. As such, for those who are influenced by their environment the potential market for the processed vegetables will depend on whether the environmental factors have a positive or negative influence towards willingness of the buyer.

4.1.12 Employment status of the respondent

The employment status of an individual was seen as an important variable in this study as it shows the potential of an individual to purchase vegetables. This is due to the fact that whilst individuals may be willing to buy the processed vegetables they may lack the ability to do so if they do not have the money. Hence, if someone is employed, he or she is in a better position of being a potential customer than the one who is not unless if the person has other sources of income. Figure 4.1.12 below shows the distribution of respondents with respect to their employment status.

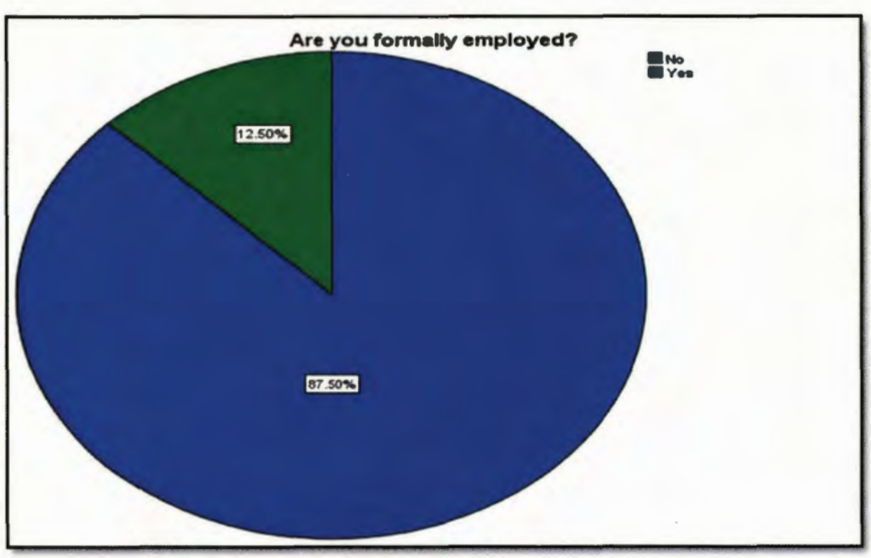


Figure 4.1.12: Distribution of respondents by employment status

The results presented in Figure 4.1.12 above show that 87.5% (175 respondents) of the respondents were not formally employed. Only (25 respondents) 12.5% of the respondents were formally employed. Studies by Ntsangani, 2010 and ASPRIRE, 2010 have shown that

people from villages surrounding Alice are poorly educated. Hence it is difficult for them to get formal jobs or stable jobs. As such, without other sources of incomes, willingness of consumers to purchase processed vegetables could be reduced. This is because lack of incomes is critical for low income groups as it plays as a major constraint to consumption of vegetables, especially considering that vegetables are more expensive when other basic foods such as rice and mealie-meal (Cox *et al.*, 1998). Therefore, individuals with low incomes are more likely to prioritise in buying other basic foods and cheaper vegetables (unprocessed vegetables) other than buying processed vegetables which are relatively more expensive.

4.1.13 Formally employed family member

As a follow up on income sources, the respondents were asked to indicate whether there was any other person in the household who was formally employed apart from them. The results of the study are presented in the Figure 4.1.13 below.

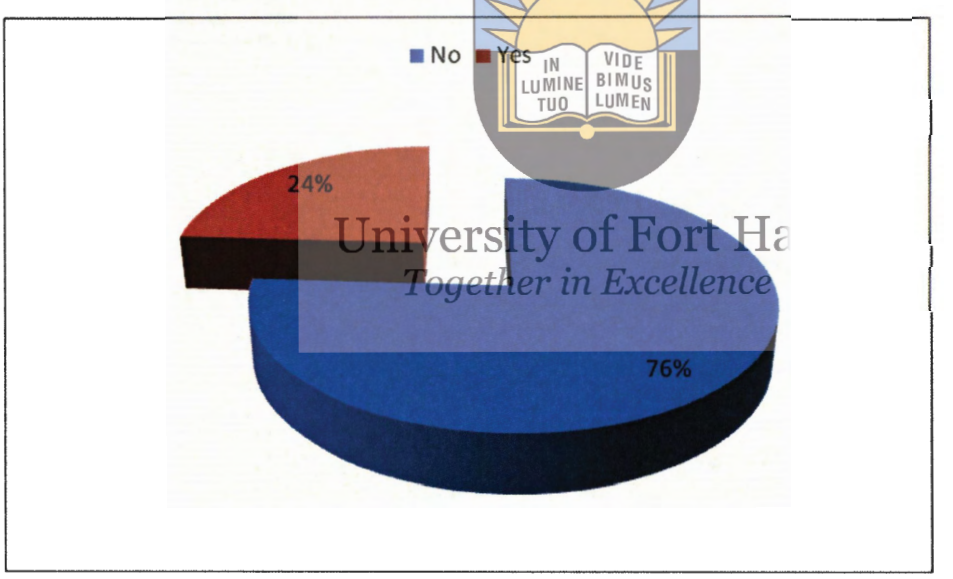


Figure 4.1.13: Distribution of respondents by whether they have a formally employed family member or not

Seventy-six percent of the respondents indicated that they had no formally employed family member and only 24% of them indicated that they had. For those who indicated that they had a formally employed family member it meant that even if the respondent was not employed, they had a source of income. As long as they had the authority to make decisions in terms of food budgets, this qualified them as potential customers with an ability to purchase. So if they happened to be willing to purchase processed vegetables, the fact that they had an input in deciding what has to be bought in the household gave them an opportunity to fulfil their willingness. Therefore, the potential market for the processed would be greater in the event

that the respondent had a greater influence in suggesting what was to be bought for the household and lower if otherwise.

4.1.14 Sources of income

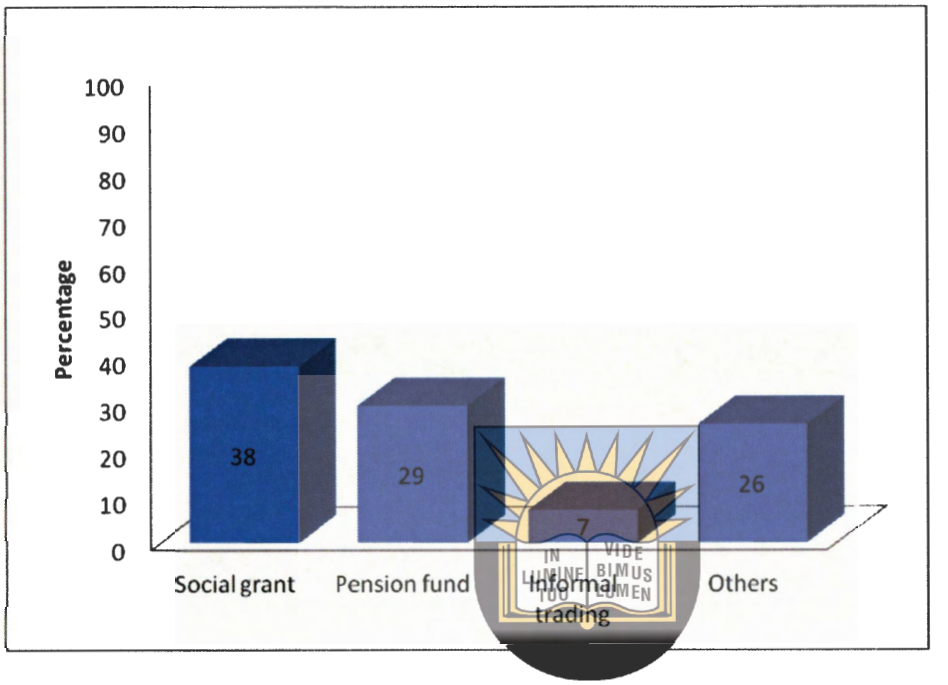


Figure 4.1.14: Distribution of respondents by their sources of income

The research showed that respondents have various sources of income as shown in Figure 4.1.14 above. From the 200 villagers that were included in the village survey, 38% of them dependent on social grants for survival in their households. Twenty-nine percent depended on the pension fund for their survival, whilst 26% depended on other sources of income, such as wages and 7% of the respondents depended on informal trading for their survival. Basically, all the respondents had at least one source of income. Those who were not formally employed had a family member who was formally employed or were doing informal activities to get income or they received either a social grant or pension fund. Knowing the sources of income is important to the processor as it gives an idea of the ability of potential customers to purchase. Since business is all about money and making profits, it would be pointless for one to engage in business if their potential customers do not have the ability to buy. The fact that villagers had at least one source of income, indicates a great market potential for the processed vegetables as long as they have the interest to buy. Thus, if the villagers are interested in buying the processed vegetables and at the same time have the ability to buy, it encourages the seller to get into business.

4.1.15 Average level of income

According to the Amathole District Municipality IDP, (2013) the majority of people in the Amatole District earn between R500 and R3500 per month. The study also shows that only a few of the people in this area earn above R3500. Further, in this similar study, it is indicated that they are people who survive with an income of below R500. It was on this basis that the income categories in this study were designed. The results from the village survey that was conducted are presented in Figure 4.1.15.

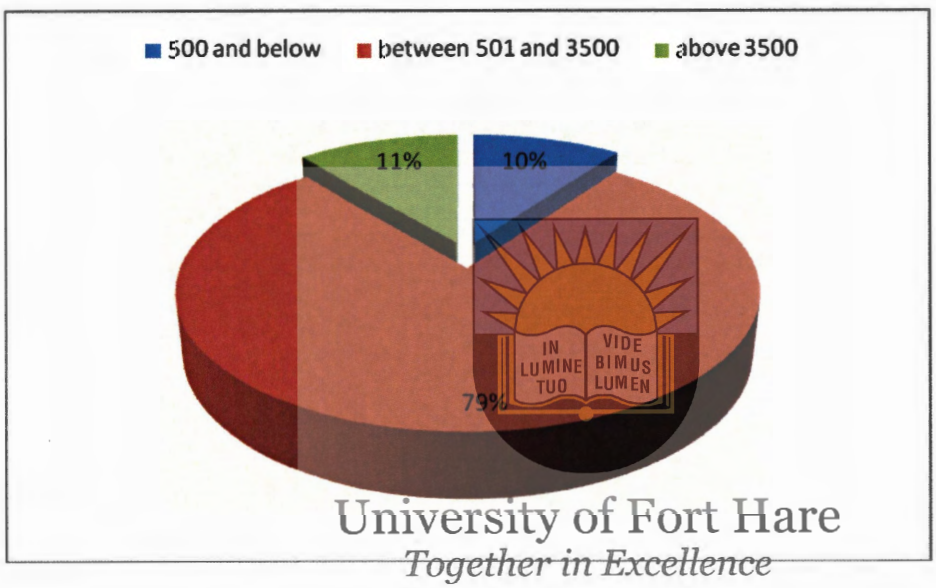


Figure 4.1.15: Distribution of respondents by income levels

The majority of the respondents, 79% indicated that they had average monthly incomes of between R501 and R3500. Eleven percent of the respondents indicated that they had income levels of above R3500 whilst 10% of them indicated that they had income levels of below R500. As indicated by the results, the majority of the people earn between R500 and R3500 but it should also be noted that these incomes are meant to cater for more than one household member. For instance, Figure 4.1.4 shows that some households are made of 5 and below members and others are made of 5 and above household members. It, therefore, means these incomes have to be apportioned among these members. For example, if a household earning R500 per month and has on average 5 members, it means per capita income will be R100. This means that for the whole month, each individual has to survive on R100 whereas if the R500 was for one person, this person would be better off. In the same manner, a household with 5 members, but which earns R3500 per month has a per capita income of R700 per head.

This means that, it is not about the level of income a household gets but it is about how many members are sharing in that income. If the income is higher and the household size is smaller,

it will be much better. For example, if it is assumed that the average household size for the village survey was 5, and the average level of income was R3500, it would mean that each household member has R700 to spend per month. In this case the potential market for the processed vegetables would be higher. But if the income is, say, R500 and still the household members are 5, per capita income will be R100 which is very low and this would reduce the potential market for the processed vegetables.

4.1.16 Factors that influence choice of vegetables

There are various factors considered by consumers when making choices on which vegetables to buy. Such factors may include the appearance of the vegetables, price, freshness, colour and packaging FAO (2004a), but each individual may consider different factors when making vegetable choices. In order to know which of the factors are important to the village respondents, villagers were asked to indicate the factors which influenced their vegetable choices. These factors included appearance, price, freshness and any other which were not specified. Knowing these factors may help producers to know the most important factors they need to address so that their products meet market requirements. Figure 4.1.16 shows the results for the village that was

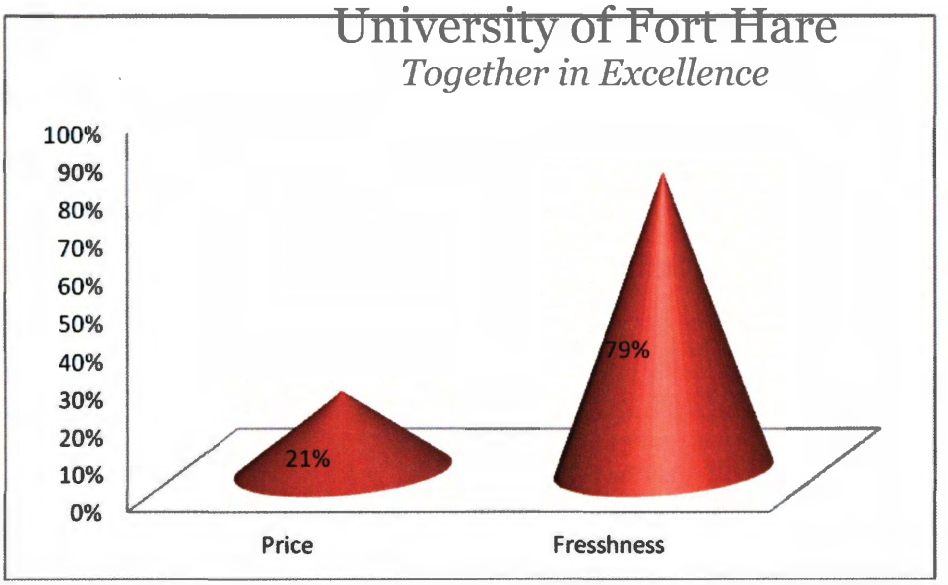


Figure 4.1.16: Distribution of respondents with respect to factors influencing their vegetable choices

Freshness and price of vegetables were the only two factors that were shown to influence the villagers' choice of vegetables. Of the 200 village respondents, 79% of them indicated that freshness of vegetables was the most influencing factor that led them to buy any vegetable. The results of this village survey are in line with the findings from a study by Ragaert *et al.*, (2004) which was done in Ghana which revealed that freshness was amongst the most

decisive attributes for choice vegetables and that individuals chose supermarkets based on the freshness of vegetables they sold. Another study by Revell (2012) also found that freshness was the key determinant of consumers' decision whether or not to purchase vegetables. This implies that vegetable processors have to strive to produce freshly cut vegetables that will meet the need of their potential customers. For instance, in this study, the fact that the majority of the respondents looked at the freshness of vegetables for them to buy, means that vegetable processors have to also select fresh raw vegetables for processing. For example, if one processes an old cabbage with yellowish leaves, the cut cabbage will also be yellowish and for people who prefer green leaf cabbage, this will mean reduced willingness to buy. Only 21% of the consumers considered price as the most influencing factor that affected their choice of vegetables. The most common reason for considering the price of vegetables was due to limited incomes. In the same study by Revell, (2012), it was shown that in as much as the price was not the most influencing factor when it came to purchase decision making, it was also an important determinant. This also means that processors have to find ways of accommodating those who are price sensitive when pricing their products.

4.1.17 Quality and sources of vegetables

According to Lazarova (2010), quality is a complex perception of many attributes such as appearance, taste, freshness, smell and colour which are simultaneously evaluated by the consumer either objectively or subjectively. Considering that consumers have recently become more concerned about the quality of food they eat Camelo (2002) and Lazarova (2010), have pointed out that the absence of one of the attributes that consumers use as a measure of quality may have considerable effect on where consumers choose to buy. In this study, respondents were asked to indicate whether the quality of vegetables affected where they chose to buy most of their vegetables and the results are presented in Figure 4.1.17 below.

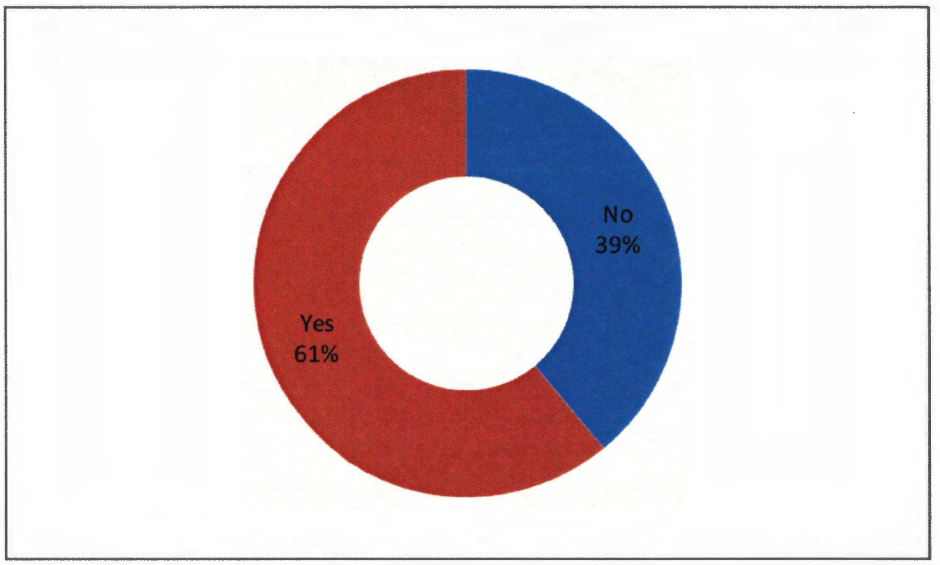


Figure 4.1.17: Distribution of respondents by whether or not quality affected where they bought most of their vegetables

As shown in Figure 4.1.17 above, 61% of the respondents indicated that the quality of vegetables affected where they bought most of their vegetables whilst 39% indicated that quality did not affect where they bought most of their vegetables. For those who did not mind (39 %), some stated that they can buy from anywhere, as long as the vegetables sold are fresh. However, as indicated by the results, the majority of respondentsindicated that the quality of vegetables influenced where they bought most of their vegetables. Thus, it means that for processors to attract a larger proportion of customers in the market, they should produce high quality vegetables to satisfy the needs of customers.

4.1.18 Origin of vegetables

The results of the village survey , show that 64% (128 out of 200) of the respondents did not care where the vegetables they bought were grown. Thus, they did not mind whether the vegetables were grown in their local places or not, but as long as the vegetables were fresh they could buy. Thirty-six percent (72 out of 200) of the respondents, however, indicated that they cared where the vegetables they bought were grown. A larger proportion of villagers noted that they did not care about the origin of vegetables, which means that the processors are at liberty to utilize whatever source of vegetable they get as long as the sources have good quality vegetables as this will affect the quality of processed vegetables. For those who cared about the origin of the vegetables, the processors should also accommodate them since they can also offer a considerable potential market. For example, they may do this by labelling the packages for the processed vegetables for easy traceability.

4.1.19 Vegetables preferred

Having seen from above that, consumers had different sentiments about the vegetables they chose to buy. Consumers were then asked to indicate their preferred vegetables between those that are locally grown (grown within their villages) and those that are not locally grown irrespective of whether or not they cared where the vegetables they bought were grown.

The majority of the respondents, 145 (72.5%), indicated that they preferred vegetables that were locally grown. Thus, in as much as they sometimes bought vegetables from the shops, they preferred those that are grown within their communities since they saw where the vegetables were grown. Also, they had opportunities to select the ones they wanted to buy from the community gardens. Further, the locally grown vegetables were said to be cheaper than the ones bought in the shops. In contrast to this, from the 55 (27.5%) respondents who preferred vegetables that were not locally grown, some indicated that the ones sold in the villages were not of good quality since they did not look so fresh. For instance, some said village producers had a tendency of selling vegetables that were harvested the previous day with leaves which would have shrunk at the time of sale due to lack of good storage facilities. Some of them also indicated that the vegetables were grown in dirty environments; hence they did not like them.

4.1.20Awareness on AgriParks products

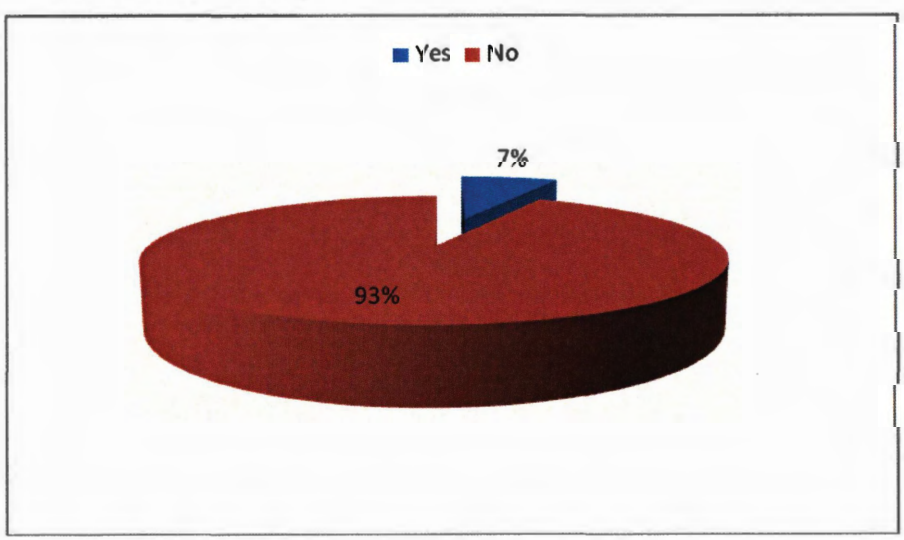


Figure 4.1.18: Distribution of respondents with respect to whether or not they were aware of AgriParks products

Out of the 200 village respondents, only 14 respondents represented by 7% in Figure 4.1.18 above were aware of the AgriParks products. The majority of the respondents 186 (93%) of the respondents were not aware of the products. As reflected by these results, very few people knew about the products sold by the AgriParks. This implies that, in order to increase the

potential market for the processed vegetables, there is a need for more marketing or awareness campaigns for the products to gain more popularity. Such a move would increase the market for the products, particularly if the consumers are satisfied with the products.

4.1.21 Quality of AgriParks products

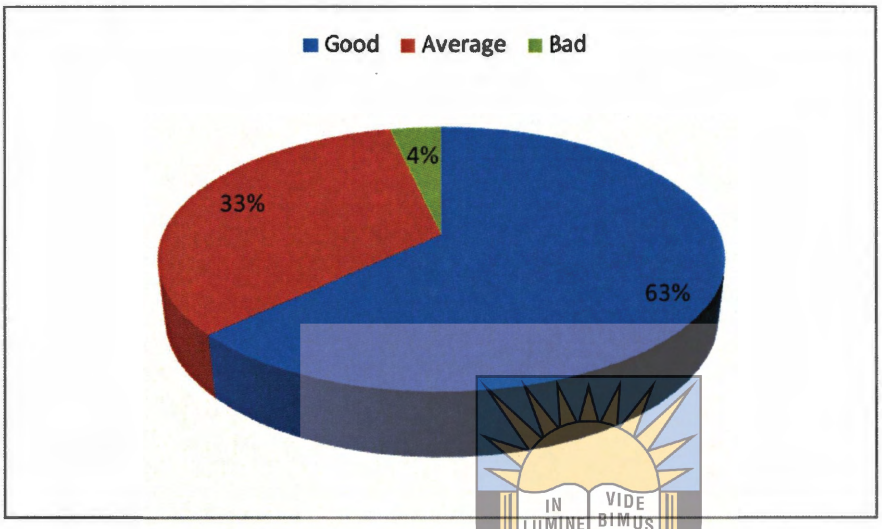


Figure 4.1.19 Distribution of respondents with respect to what they say about the quality of the AgriParks products

Of all the 200 village respondents, 63% of them indicated that the quality of the AgriParks products was good as shown in Figure 4.1.19 above. Thirty-three percent of the respondents indicated that the products' quality was average whilst 4% of the respondents indicated that the quality was bad. These results show that most of the villagers liked the quality of the AgriParks products considering that only 4% of the respondents indicated that the quality of the vegetables was bad. This then means that, it is likely that more individuals will be willing to buy the processed vegetables.

4.1.22 The variety of AgriParks products

The variety of products in this village survey referred to the availability of a wide range of processed vegetables at the AgriParks. Respondents were shown samples of processed vegetables, which are being offered by the AgriParks and were informed of other vegetables that are available at the AgriParks but were not part of the sample. Thereafter, respondents were asked to indicate if the variety was good, average or bad in terms of the wide range of vegetables and the results are presented in Figure 4.1.19 below.

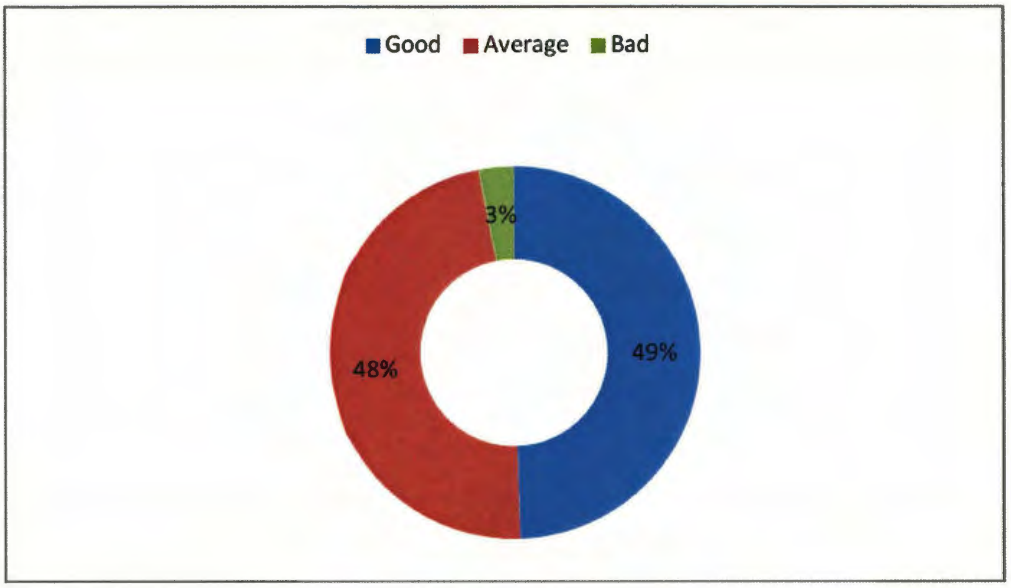


Figure 4.1.20: Distribution of respondents by what they say about variety of AgriParks products

Forty-nine percent of the village respondents indicated that the variety of AgriParks products was good since they offered many different types of vegetables. Forty-eight percent of the respondents indicated that the variety was average and 3% of them indicated that the variety was bad. Studies by Simonne *et al.*, (2006) and Usha (2007) showed that a wide range of vegetables had an influence on where consumers did most of their vegetable purchases. Therefore, this means that the wider the range of vegetables offered by the seller the more consumers they attract. In the same manner, since most respondents indicated that the variety of processed vegetables offered by the AgriParks was average to good, it perhaps means there could be a considerably large potential market for the vegetables.

4.1.23. AgriParks products' prices

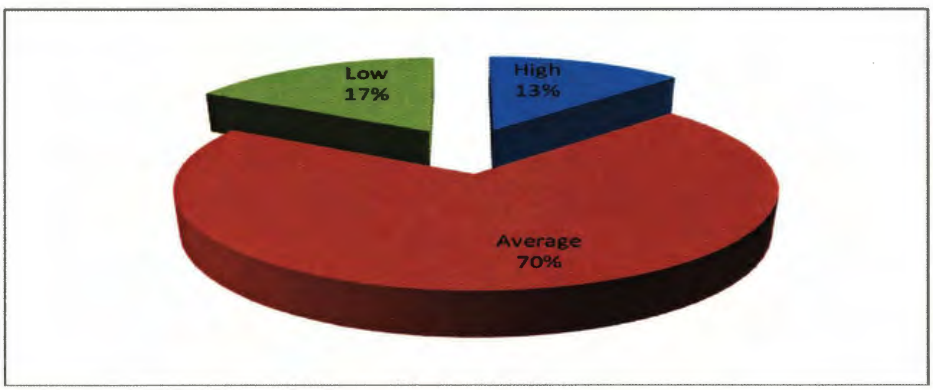


Figure 4.1.21: AgriParks products' prices

Figure 4.1.21 above indicates that the majority of the respondents, 70 % thought that the AgriParks products had average prices. Seventeen percent of the respondents indicated that

the prices were low, meaning that the products were cheap. However, 13% of the respondents indicated that the prices were high. The results from the village survey indicate that the prices of the AgriParks products are on average affordable. Therefore, there is a high chance that the villagers will be willing to buy the vegetables and thus increasing the potential market for the processed vegetables.

4.1.24 Packaging done by AgriParks

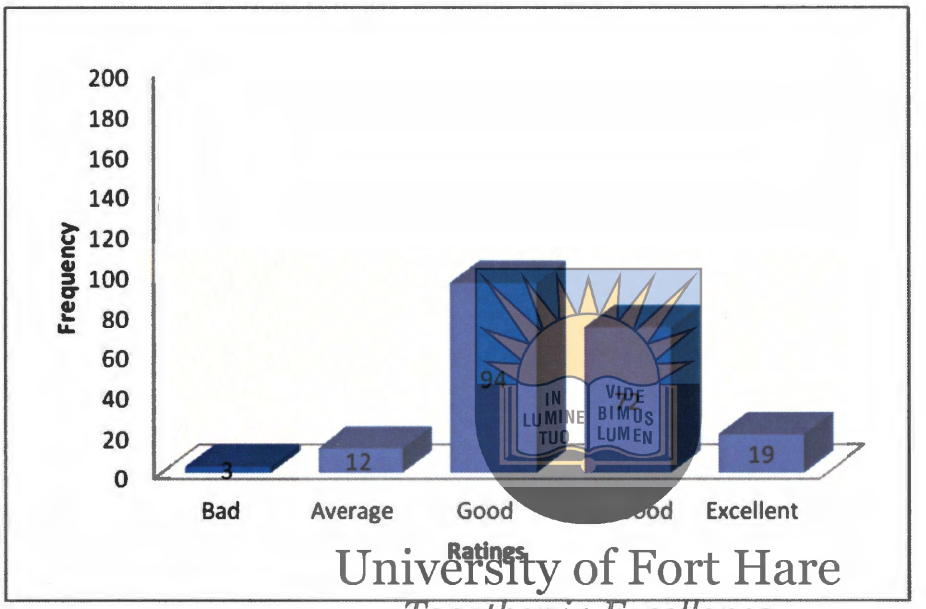


Figure 4.1.22: Rating of packaging done by AgriParks

Respondents were asked to rate the packaging of the AgriParks products from bad to excellent. Two percent (3 respondents) indicated that the AgriParks products were badly packaged. Six percent (12 respondents) indicated that the packaging was average, meaning that it was neither bad nor good. The majority of the respondents, 47% (94 respondents), indicated that the packaging was good and 36% (72 respondents) indicated that the packing was very good. A smaller percentage 9% of respondents indicated that the packaging was excellent.

Packaging is done for several reasons, for example for easy transportation, preventing moisture loss and to attract consumers (FAO, 1988). However, it influences different categories of consumers in a different way. For instance, Sigh and Sigh (2014), found that for rural consumers, packaging was not a very important factor in influencing them to buy any product. This implies that whether or not the product package is good, it may not really have an impact on the choices of rural consumers, but the product itself has to be convincing to them. Therefore, this also means that the potential market for the processed vegetables sold by AgriParks may not depend on its packaging but on how the villagers rate the vegetables.

4.1.25 Attitude towards processed vegetables

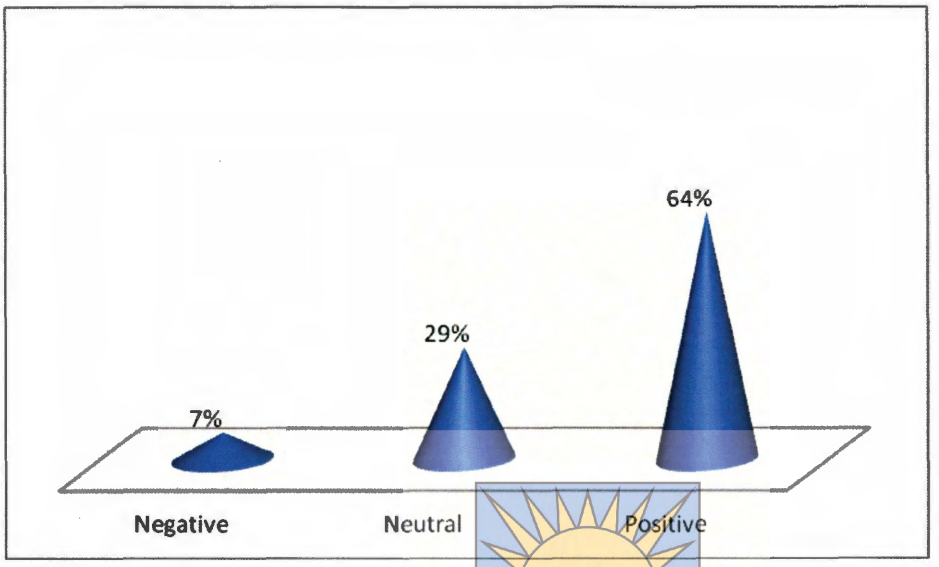


Figure 4.1.23: Attitudes of respondents towards processed vegetables

The majority of the respondents (64%) indicated positive attitudes towards the processed vegetables. A positive attitude was favourable as it would mean higher willingness of consumers to buy processed vegetables. Twenty-nine percent of the respondents, however, indicated that their attitude was neutral whilst 7% of the respondents indicated a negative attitude towards processed vegetables. A neutral and negative attitude of the respondents may result in reduced market potential unless these people are motivated to change their attitudes through various incentives. For example, lower prices can be used as an incentive to attract customers.

4.1.26 Concluding remarks

This section (4.1) presented descriptive statistics results in which tables, graphs, pie charts, frequencies and percentages were used to present results of the village survey that was conducted. It gave an overview of the demographic information, economic statuses, social factors that may influence customers' choices of certain types of vegetables. The section also presented results on the factors that consumers consider when making purchasing decisions for vegetables. It also gave an overview of results about what respondents thought about AgriParks products in terms of their quality, variety, prices and packaging.

The descriptive statistics results from the village survey as has been shown in Figure 4.1.9 also reveal that, most of the village respondents (75%) showed interest in the processed vegetables and most of them had positive perceptions towards the vegetables (64%). This

indicates that there is a potential market for the vegetables. The next stage was to find the significant factors that influence the individual respondents' willingness to buy processed vegetables and this was done through a binary logistic model as explained in section 3.4.2. The results for this are presented in section 4.2 below.

of an individual to buy processed. That is if an individual has a positive attitude towards a product, the possibility that the person will buy that product is very high.

4.2 Binary logistic regression model results

This section of results concentrates on presenting empirical results of the model that was formulated in chapter three in accordance to objective two which determines factors that influence customers' willingness to buy processed vegetables. The independent variables were tested for their significance towards influencing willingness of customers to buy processed vegetables.

4.2.1 Model empirical results

The results of the binary logistic regression model are presented in Table 4.1 and it shows all variables that were tested. Table 4.1 shows the estimated coefficients (β values), standard error (SE), significance values and Exp (β) or odds ratio of the independent variables in the model.

The coefficient (β values) show how the log-odds of a 'success' change with a one-unit change in the independent variable (Gujarati, 2004). Increasing the log-odds of a success means increasing the probability and vice-versa and decreasing the log-odds of a success means decreasing the probability. In other words, the coefficient (β) measures the expected change in the dependent variable for a unit change in each independent variable, all other independent variables kept constant. The sign of the coefficient (β), shows the direction of influence of the independent variable on the dependent variable (Gujarati, 2004). The coefficient can either be negative or positive, with a negative value implying a negative relationship between the independent and dependent variable and positive sign implying a positive relationship between the dependent and independent variables. In this study, a positive coefficient shows an increase in the likelihood that a customer will purchase processed vegetables and negative will reduce that likelihood.

On the other hand, the significance values (p-values) show whether or not a change in the independent variable significantly influences the dependent variable at a given level. In this study the variables were tested at three different significance levels, which are 1%, 5% and

10% significance levels. Hence the significance value of less or equal to 0.01; 0.05 and 0.1, means that there is enough evidence to support that the independent variable influences willingness to buy processed vegetables and vice-versa.

The odds ratio indicates the extent of the effect on the dependent variable caused by the predictor variables (Gujarati, 2004). For example, a unit change in X_1, increases the odds by a multiplicative factor of exp β_1. The odds ratio value is obtained by exponentiating the log-odds (coefficient β). In Table 4.1 the value of the odds ratio is represented by Exp β. An odds value of greater than one implies a greater probability of that variable's influence on the dependent variable and a value less than one indicates that the variable is less likely to influence the dependent variable. The standard error measures the standard deviation of the error in the value of a given variable (Gujarati, 2004).

As is shown in the Table 4.1, 6 predictor variables were significant at different levels of significance. Two variables were found statistically significant at 1% significance level, three variables were significant at 5% and one was significant at 10% significance level. The variables that were significant include own production of vegetables at home, preservation of vegetables at home, the personality of the respondent, the environment in which the respondent lives or grew up in, the quality of the products and the attitudes of individuals towards processed vegetables. However the other six variables were found to be not statistically significant and these included, gender, highest level of education, household size, prices of products, variety of products and packaging of the products. As has been mentioned earlier, the non significance of these variables implies that there is a lack of evidence to conclude that these variables influence willingness of individuals to buy processed vegetables.

Two extra descriptive measures of goodness-of-fit are presented in the table and they assess the fit of the logistic model against actual outcomes. The R^2 indices as defined by Cox and Snell and Nagelkerke had values of 0.387 and 0.576 respectively. The R^2 values of both indices lay between 0 and 1, confirming that the goodness of fit of the model. According to Norusis (2004), Nagelkerke R square, measures the proportion of the variation in the response that is explained by the model. In this study, Nagelkerke R Square of 0.576 was obtained and this indicates that more than half of the variation in the response was explained by the model. In addition to that, the overall prediction of the model was 89.5% and this means that more of the variation in the response was explained by the model.

Table 4.1 Binary logistic results for willingness and non-willingness to buy processed vegetables

Variable	B	S.E.	Wald	Sig.	Exp(β)
Gender X_1	-.216	.603	.129	.720	.805
Highest level of education X_2	-.045	.347	.017	.898	.956
Household size X_3	.419	.449	.869	.351	1.520
Own production X_4	-1.376	.522	6.950	.008**	.252
Home preservation X_5	-1.365	.524	6.776	.009**	.255
Personality X_6	1.500	.503	8.875	.003***	4.480
Environment X_7	1.075	.577	3.467	.063*	2.930
Quality of products X_8	1.051	.586	3.223	.073*	2.862
Variety of products X_9	.696	.592	1.383	.240	2.005
Product prices X_{10}	.622	.476	1.711	.191	1.863
Product packaging X_{11}	-.155	.342	.205	.651	.857
Attitude X_{12}	2.051	.430	22.770	.000***	7.777
Constant	-4.320	1.263	11.701	.001	.013
-2 log likelihood	124.855[a]				
Cox & Snell R Square	0.387				
Nagelkerke R Square	0.576				
Overall model prediction	89.5%				

Key: *** 1% significant;

**5% significant;

*10 significant

The perception that a person who produces his or her own vegetables at home is less likely to be willing to buy processed vegetables had a negative coefficient as was expected. This means that there is a negative relationship between willingness to buy processed vegetables and own vegetable production. This therefore implies that a further increase in own production of vegetables at home; will result in reduced willingness of those persons to buy processed vegetables. In other words, a unit increase in own production of vegetables at home will result in a -1.376 unit decrease in the willingness to purchase processed vegetables.

Households who do home preservation of vegetables would be expected to be less willing to purchase processed vegetables since they make their own reservations for future consumption. Results from this study showed a negative coefficient which suggests a negative relationship between the independent variable (home preservation of vegetables) and the dependent variable (willingness to buy processed vegetables). Thus, every unit increase in vegetable preservation at home leads to a -1.365 unit decrease in the willingness of customers to purchase processed vegetables holding all other independent variables constant. Considering that it is more rational for households that do home preservation of vegetables to save by not buying processed vegetables that are considered to be expensive, it is therefore advantageous for them to utilise what they have. This is confirmed by significant value of 0.009.

The personality of the consumer was also found significant with a positive coefficient of. The expected signs were either negative or positive due to the fact that someone's personality can have the ability to either enhance or reduce his or her willingness to buy processed vegetables. According to Perreau, (2013) decisions and buying behaviour of each consumer are influenced by the characteristics of each consumer such as personality. Perreau (2013) indicates that consumers do not just buy products based on their needs or for their intrinsic features, but they also look for products that are consistent with or that reinforce the image they have of themselves or the image they would want to have. As such, in this study personality was found to have significant influence on the willingness of a consumer to buy processed vegetables. This is confirmed by a significance value of 0.003 as shown in Table 4.1. Personality had a coefficient of 1.500 and this means that a positive unit increase in the personality of a person will lead to a 1.500 unit increase in the willingness to purchase processed vegetables.

Apart from personality, the environment in which a person lives also has a great influence on the type of vegetables one may want to buy. A person's environment is made up of his or her social, cultural and the surrounding environment (family, friends and relatives) (Perner, 2008 and Perreau, 2013). Studies by Nagaraja, (2004), Perner, 2008 and Perreau, 2013 showed that the buying behaviour of consumers was influenced by experiences of their own, neighbours and mainly of their own family. These findings support the findings of this study whose results show a positive relationship between the environment of the consumer and willingness to purchase processed vegetables. The coefficient of 1.075 indicates that a positive unit increase in environment of the consumer has an ability of increasing willingness of the consumer to buy processed vegetables by 1.075 units. As indicated by results, a positive unit increase in the environment of a person brings about more than one unit increase in willingness to purchase processed vegetables; it means the environment of a person has a great influence over his or her willingness to buy processed vegetables. The significance of environment in vegetable purchasing was confirmed to be significant at a 0.063 significance level.

Apart from socio- economic factors, prod also have an influence on the willingness of consumers to purchase process vegetables. This means that the product itself has the ability to influence willingness of consumers to either or not buy it. Such factors include quality, variety, prices and packaging.

The quality of products was significant (0.073) and positively related to willingness to buy processed vegetables as shown by a positive coefficient. This implies that a unit increase in the quality of the products would lead to a 1.051 unit increase in the willingness to buy processed vegetables. This is a likely situation as one would expect that an increase in the quality of a product would lead to an increased willingness of consumers to buy processed vegetables particularly to quality driven consumers. This means that processors have to be conscious about pricing. For example, processors should have differential pricing systems thus, higher prices which matches high quality produce and lower prices for low quality produce. This accommodates all categories of consumers thereby bringing more incomes to the processor. The results of this study are in line with the findings from studies by Usha (2007) and Singh and Singh (2014) which reported that quality was one of the most important factors which influenced the purchase of vegetables by respondents.

Above all, the attitude of consumers towards processed vegetables has the ultimate influence as to whether or not an individual can be willing to purchase processed vegetables. Empirical

results show that there is a strong relationship between attitude and willingness to buy processed vegetables as confirmed by a significant value of 0.000 as shown in the Table 4.1 above. The strong relationship between attitude and willingness to buy has serious implications towards the market for processed vegetables. As such, vegetable processors should find ways of influencing consumers to have positive attitudes towards processed vegetables for example through advertising. The coefficient is positive implying a positive relationship between the attitude of consumers and willingness to buy processed vegetables. The coefficient of 2.051 indicates that a unit increase in the positive attitude of a consumer towards processed vegetables will result in 2.051 units increase in willingness to buy processed vegetables.

4.2.2 Concluding remarks

The empirical results of this study showed that there are various factors that may influence willingness of consumers to buy processed vegetables. These factors include own production, preservation of vegetables at home, personality of the consumer, the environment in which the consumer lives or grew up in and [illegible] of the consumers towards processed vegetables. The results also showed that there are product factors that can influence willingness of consumers to buy processed vegetables such as quality. That is if an individual has a positive attitude towards a product, the possibility that the person will buy that product is very high.

4.3 Results on supermarkets survey

This section of data analysis will discuss the results from the survey that was conducted on supermarkets. Basically ten supermarkets were interviewed in the three study areas that have been selected for this research and these included supermarkets from Alice town, King Williams and East London. From these supermarkets, it was either the shop manager or vegetable section managers that were interviewed. Supermarkets offer a huge potential market for processed vegetables due to the fact that they are the most common middlemen between customers and processors (suppliers). It is for this reason that supermarkets were included in the study in order to determine their potential in being customers for processed vegetables. A self administered questionnaire was used to collect data. Below are the results from the survey that was conducted on the supermarkets.

4.3.1. Processed vegetables

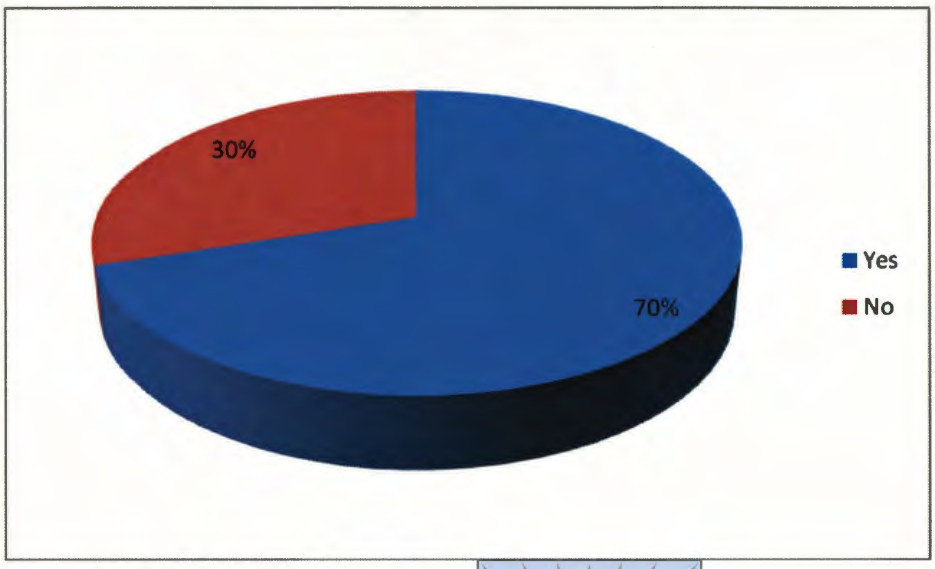


Figure 4.3.1: Shows the distribution of supermarkets by sales of processed vegetables

Of all the respondents, 70% of them indicated that they deal in processed vegetables whilst 30 % of them indicated that they did not. Of those who indicated that they sold processed vegetables, the majority of them indicated that they bought the vegetables from Fresh Mark, located in Port Elizabeth and Durban, whilst some indicated that they had own suppliers which they could not mention for confidentiality reasons. Some of the respondents also indicated that they did in-shop processing of fresh vegetables. As a result, there were unable to buy from AgriParks since they had their own supplies already for the processed vegetables.

Among those supermarkets which mentioned that they did not buy processed vegetables for resale, the most common reason as to why they did not buy processed vegetables was that of rationality. Thus, most of the customers they served preferred unprocessed vegetables. One of the managers mentioned that the market for processed vegetables is a 'white market'' meaning to say only a few black customers with big families can be willing to buy processed vegetables but would rather buy the ones not processed. Hence this affected their decision making as to whether they could buy the processed vegetables as they were not certain if their customers would buy them.

4.3.2. Knowledge about the processed vegetables sold by the AgriParks

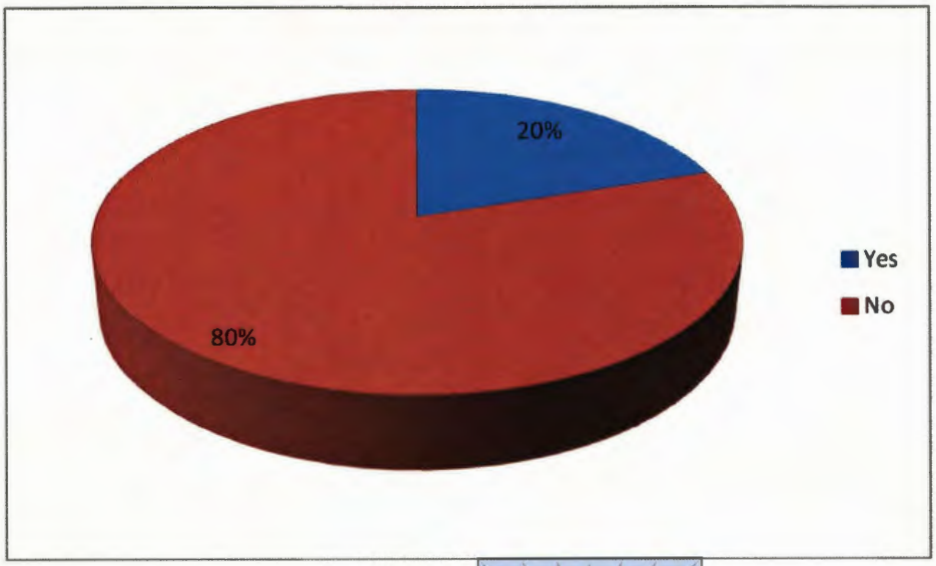


Figure 4.3.2: Distribution of respondents by awareness on vegetables produced by the AgriParks

Supermarkets' respondents were asked whether or not they were aware of the processed vegetables that were produced by the AgriParks. The results of the survey revealed that only 20% of the respondents knew about the products. Unfortunately the majority of the respondents represented by 80% were not aware of the products. This presented a very difficult situation for the AgriParks as this would affect the decision of respondents as to whether or not they could buy from them. For example, for one to make a purchasing decision, he or she has to know about the product either through past experience or by being informed. It therefore means the processor has to find ways of making customers aware of its products. For example, this could be attained through advertising by use of various media such as flyers.

4.3.3. Willingness to buy AgriParks' processed vegetables

Having been shown the sample of products offered by the AgriParks, the respondents were asked to indicate whether or not they would buy from the AgriParks? The graph below shows the results of the survey with respect to this question.

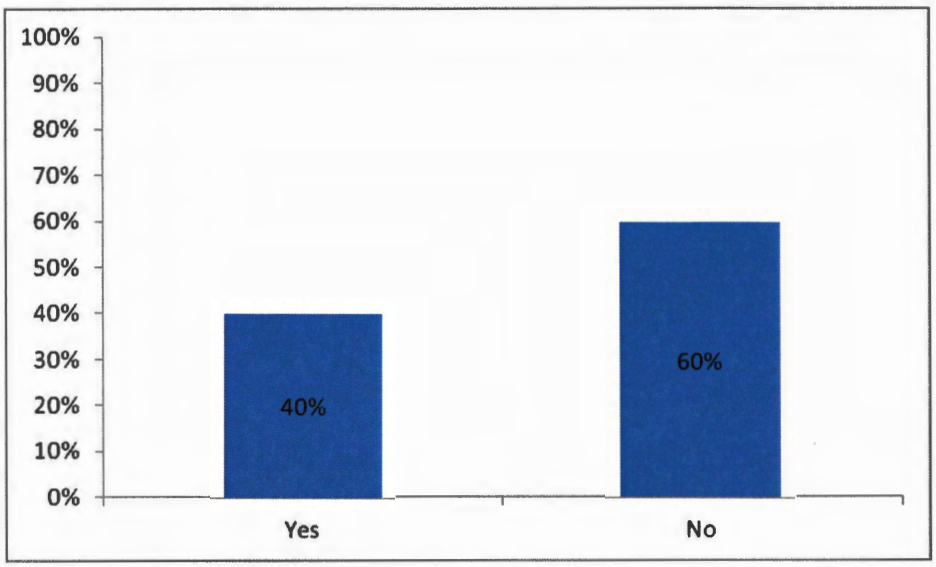


Figure 4.3.3: Distribution of respondents with respect to whether or not they would buy from the AgriParks.

Forty percent of the supermarkets' respondents indicated that they would not mind buying from the AgriParks. However, 60% of the respondents stated that they could not buy from the AgriParks. Considering the fact that only 20% of the respondents knew about the AgriParks products and having 40% willing to buy from them, this showed that there was a good market potential for their produce.

Of the 60% of respondents which indicated that they could not buy from the AgriParks, various reasons were given as to why they could not buy and these included the following; (*i*) supermarkets had own suppliers with which they have long relationships. It was found that most of the shops, buy their processed vegetables from Fresh Mark or Distribution centre which all purchase vegetables, does all the quality checks, and processes and distributes to respective supermarkets. This is one factor that presents a barrier to successful marketing by small agro-processors as most of their produce often fail to meet prevailing market standards (Davis, 2006). (*ii*) No sales of processed vegetables in their shops (*iii*) own processing (*iv*) satisfied by current supplies.

4.3.4. Current contracts

Respondents were asked to indicate their current contracts. This question applied to all supermarkets irrespective of whether the supermarket had indicated that it would buy from the AgriParks or not. The aim of the question was to show a picture of the demand for the processed vegetables and how often they had to be supplied. This would help the AgriParks to see if they would be able to meet demand in the event that they got contracts to supply the processed vegetables.

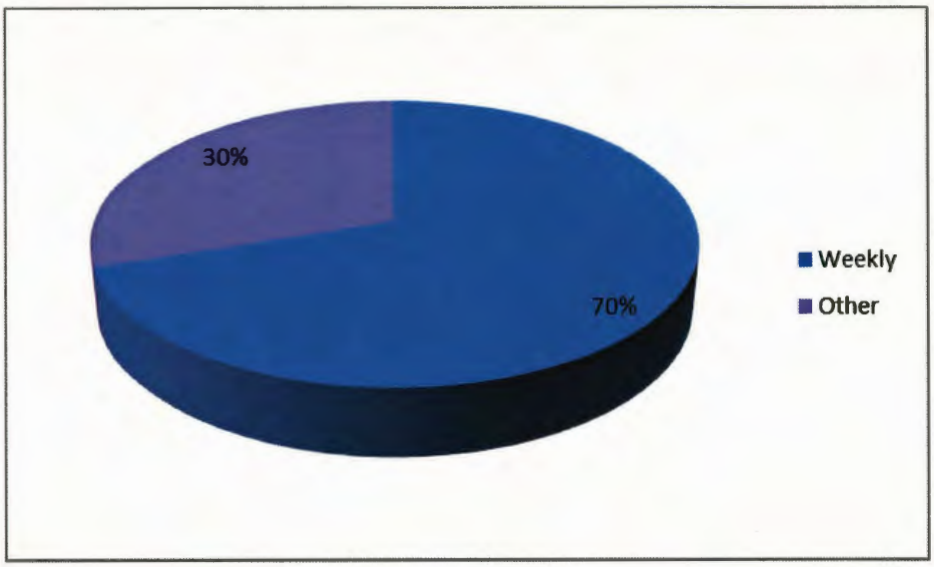


Figure 4.3.4: Distribution of respondents by their current contracts

The results of the survey showed that most of the supermarkets 70% of those interviewed had weekly contracts, whilst 30% indicated that they had other contracts. Of the 30% who indicated they had other contracts, all of them noted that they ordered vegetables half-weekly, meaning that the supplier had to deliver vegetables twice a week. None of the respondents had a monthly and seasonal contract.

This probably meant that the AgriParks had to be sure that it would be able to meet demand as required by the potential customers before entering into any contract. As has been mentioned above in section 4.3.3 that one of the reasons why many shops would not buy from the AgriParks was that they had their suppliers for which they had long relationships and there were satisfied by the current supplies. Failure to meet demand as agreed would make customers to cancel their contracts with them. Evidence from the literature has shown that unreliability of small-scale processors is one of the reasons why many customers cannot deal with them (Davis, 2006). Therefore, small scale processors should try and satisfy customers in the event that they get contracts as this will give them a good image and even attract more customers.

Further, respondents indicated that the supplier had to provide their own transport, meaning to say they had to transport the products to respective supermarkets. This also can be a problem for most emerging consumers since they may not have suitable transport for the transportation of fresh produce. This also affects the decision of supermarkets to buy from these small processors since they may not be willing to fetch the processed vegetables by themselves.

4.3.5. What potential customers think about AgriParks prices

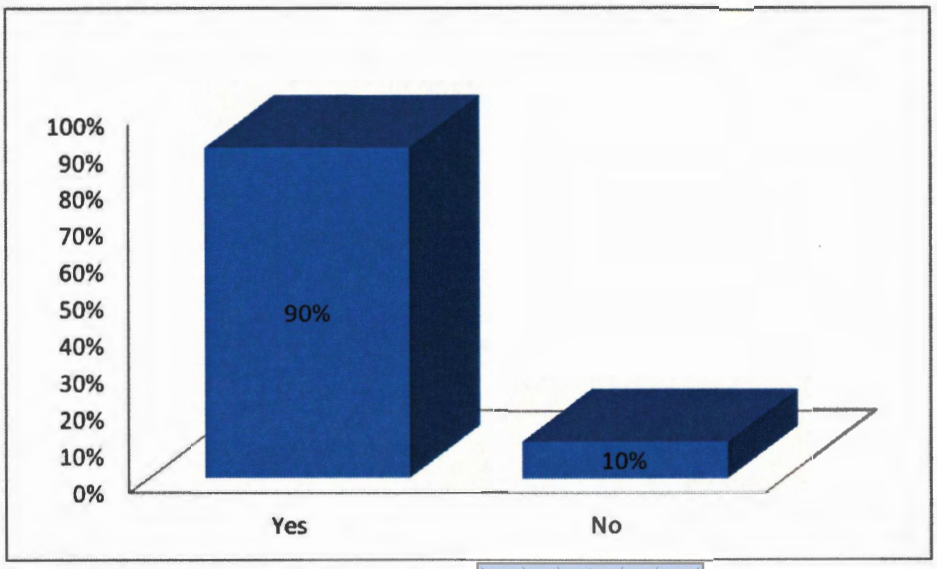


Figure 4.3.5: Distribution of respondents by what they thought about AgriParks prices

Of all the respondents, 90% of them indicated that the prices charged by the AgriParks were fair whilst 10% indicated that the prices were not fair. Since the majority of the respondents mentioned that the prices were fair, this p[illegible]ans that there is a great market potential for the products produced by the AgriParks. This is due to the fact that a considerable number of customers, especially retailers consider price as one of the factors that influence them to buy because they buy for resale. Therefore, if they buy at higher prices, this could mean reduced profits as high prices could discourage buyers.

4.3.6. Important attributes considered when making decisions to purchase processed vegetables

There are various attributes that consumers consider when making decisions to purchase processed vegetables. According to Rodov *et al.,* (2009) these include sufficient shelf life, guaranteed microbiological safety, an absence of chemical preservatives and toxic residues, non-compromised freshness, flavour and health value, an attractive appearance, convenience and an affordable price. Thus, in order to meet market demands, processed vegetables should therefore posses these attributes. In this study, in order to see the importance of attributes considered by customers when purchasing processed vegetables, respondents were asked to give ratings for various attributes. The attributes that were included in the study are quality, freshness, price, appearance, uniqueness, colour and vegetables locally grown.

A 5-point scale was used in rating the attributes shown in the graph and was interpreted as follows; 1= attribute not important at all; 2= attribute not important; 3= attribute not important nor important (neutral); 4= attribute important and 5= attribute very important. The

results of the survey are shown in the figure below and they are represented as weighted averages.

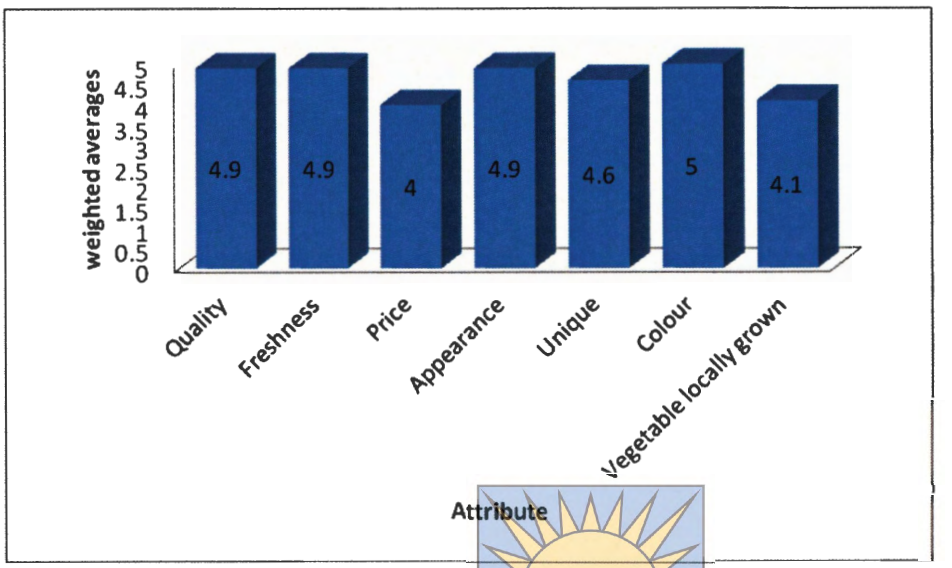


Figure 4.3.6: Distribution of respondents with respect to the importance of attributes they consider when making decisions to buy processed vegetables

Quality was rated 4.9 which is very close to the maximum point on the 5-point scale. This means that quality is a very important attribute that most supermarkets if not all consider when making decisions to buy processed vegetables. It therefore means vegetable processors have to struggle to meet high quality standards demanded by supermarkets since if they do not meet these high quality standards, they may lose business. This is due to the fact that supermarkets may not buy low quality products since they also seek to protect their images through high service delivery to their customers. The findings of this research are in line with the findings of a study which showed that supermarkets work only with suppliers who can provide good quality products in large quantities (The Geography site, undated). This is because supermarkets can only sell things that their customers want.

Perhaps this is one of the reasons why some of the supermarkets indicated that they only buy their processed vegetables from Fresh Mark which does all the grading and quality checks for them. Hence the AgriParks has to invest in quality checking infrastructure for it to qualify as a supplier of high quality products.

It should also be noted that investing in quality checking infrastructure is not enough in maintaining the quality of processed vegetables. This is because the quality of fresh processed vegetables is also affected by various factors such as harvesting at optimum maturity, minimisation of mechanical injuries, use of proper sanitation procedures, providing the optimum temperature and relative humidity during all marketing steps (Kader *et al.*,

1989). Therefore, processors should ensure that all these factors are taken care of as they highly contribute to the quality of their produce.

Freshness and appearance were also rated 4.9 which means that there are also very important attributes that customers consider when making decisions to buy processed vegetables. Unlike quality which requires some machinery to check, freshness and appearance of vegetables can easily be judged by merely looking with a bare eye. According to James and Ngarmsak, (2010) one of the reasons why consumers generally purchase fresh-cut produce is because of their freshness. It therefore means vegetable processors should select and process vegetables that are fresh so that they can supply fresh processed vegetables that meet customers' demand.

Apart from the freshness of the vegetables, the appearance of vegetables as has been indicated above is a very important attribute of processed vegetables. For instance, for processed butternuts, a customer would consider how the butternut has been sliced. Therefore, processors have to be very careful when dealing with processed vegetables because if they do not look presentable to [illegible]ers, this may make customers unwilling to buy them. Another way of making processed vegetables look presentable is by improving their packaging through the use of colourful and air tight packages. Thus, colourful packages improve the colour of the processed vegetables and thereby making them more attractive to buyers. On the other hand, airtight bags prevent air from entering into the vegetables and this protects them from going bad quickly a development which keeps their good appearance for quiet a reasonable time.

Price was rated 4 and this means that price is an important attribute that customers consider when buying processed vegetables. This is in fact a reasonable outcome considering that supermarkets are middlemen who buy products for resale. Hence, if the price has to be too high it therefore means supermarkets will be forced to sell at higher prices to final consumers. Taking into consideration the law of demand, which states that when the price goes down quantity demanded will increase, this therefore means quantity demanded for the processed vegetables will go down if supermarkets charge higher prices. As a result, supermarkets may stop buying these high priced processed vegetables, which will lead to loss of business from the processors.

Whilst this can be the case for high prices, some supermarkets indicated that they would not mind buying the vegetables even if their prices were high as long as they would be satisfied with the quality. As has been mentioned by Camelo, (2002) and Lazarova (2010), consumers

have become increasingly concerned about the quality of food they eat. This can offer a good opportunity for emerging processors to make high returns through sales of high quality processed vegetables. This is due to the fact that for quality concerned customers, price does not really matter since they are prepared to pay for the quality. This was supported by one of the respondents who is the vegetable section manager in one of the supermarkets interviewed who stated that their customers did not care about the price of the vegetables, but they liked them because of their high quality which is often characterised by the long shelf lives of their products.

In addition to the above attributes, the uniqueness and the place where the vegetables were grown are other factors that consumers consider. The uniqueness attribute scored 4.6 on a 5 point scale. This shows that respondents attached high importance to the uniqueness of the processed vegetables. Uniqueness of processed vegetables can be influenced by various factors such as the way they are cut, packaging, their freshness and shelf life. For instance, one of the respondents mentioned that they liked the produce they got from their supplier because they were nicely packed into colourful, air tight packages that were so attractive. These findings are supported by a research that was done by the Food Processing Center Institute of Agriculture and Natural Resources (2002) whose findings showed that Chefs attached high importance to the uniqueness of chestnuts products. This therefore means that vegetable processors should ensure that they produce unique products.

Lastly, the locality of vegetables was rated 4.1 which means it is also an important attribute which influences the decisions of customers.

4.3.7. Ratings by customers of vegetables sold by AgriParks

Supermarkets respondents were asked to rate vegetables sold by the AgriParks with respect to quality, texture, freshness, appearance, packaging, and give an overall acceptance score on a 5-pont scale from (1= poor; 2= Fair; 3= good or satisfactory; 4= very good; 5= excellent). The respondents were allowed to have a look at the samples of processed vegetables produced by the AgriParks and then rate them with respect to the above attributes. The scores that are shown on the graph are weighted averages, meaning that it is a score that represents the responses of all the ten supermarkets that were included in the study.

The goal of this question was to show how respondents thought about the vegetables offered by the AgriParks and also show which attributes needed to be improved by the AgriParks. The results of the survey are shown in the Figure 4.3.7 below.

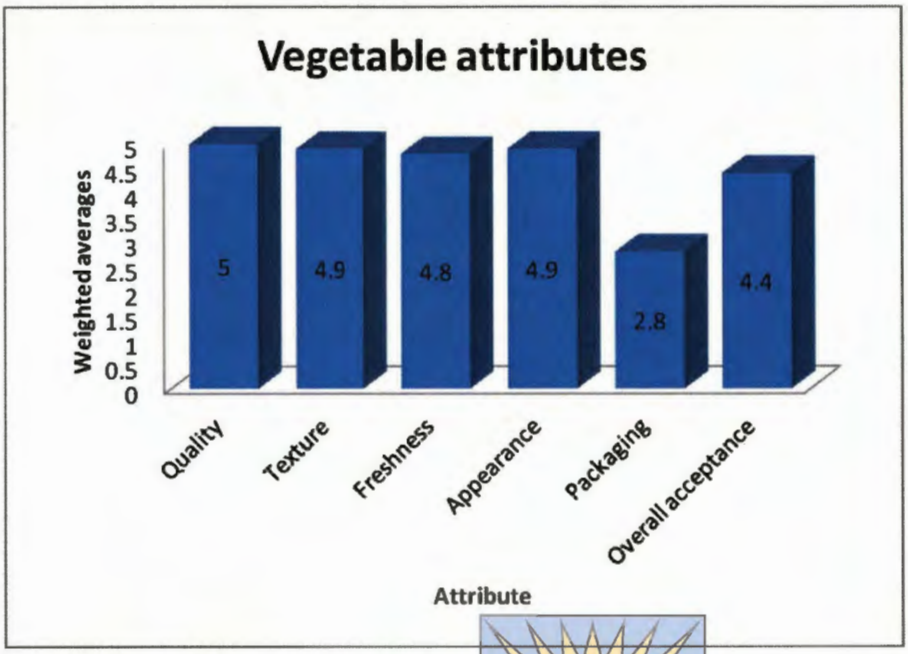


Figure 4.3.7: Distribution of respondents with respect to the various vegetable attributes ratings

Ratings by the respondents indicated that the quality of processed vegetables offered by the AgriParks was excellent as it was rated 5 on average, which is the maximum point on the 5-point scale. Texture, appearance and freshness were rated 4.9; 4.9 and 4.8 respectively. This means that respondents thought the vegetables sold by the AgriParks are also excellent in terms of these attributes since these ratings are closer to 5 which is the maximum point on the 5-point scale. Packaging was rated 2.8 which is less than point 3 (satisfactory point) and this means the respondents were not impressed with the packaging of the processed vegetables. As a result this pushed down the overall acceptance to 4.4. Of course 4.4 is not bad at all but considering that all other attributes were closer to 5, it therefore shows that poor packaging can have very serious implications towards acceptability of produce by customers.

Evidence from literature has shown that packaging has become a very important aspect in the marketing of fresh produce (Zagory, 1998). In the past, packages were only meant to create a modified atmosphere while avoiding anaerobic conditions to take place in the fresh vegetables (Kador *et al.*, 1989). In today's market, packages are expected to also serve as vehicles for attractive graphics, re-closable seals, anti-fog coatings, crinkly texture, high transparency and texture (Zagory, 1998). Thus, proper packaging of processed vegetables is therefore essential if the package has to deliver the desired value to its customers.

4.3.8 Concluding remarks

The survey that was carried out on ten supermarkets revealed that there is indeed a potential market for processed vegetables. This was shown by 40% (Figure 4.3.3) willingness of supermarkets who indicated that they would consider buying from the AgriParks. In Further, from the 60% (Figure 4.3.3) which indicated that they would not buy from the AgriParks, some suggested that the AgriParks can sell to them via Fresh Mark, meaning to say it can go into a contract with Fresh Mark their main supplier of the processed vegetables.

The study also showed that there are various attributes that influence decision making of customers to buy processed vegetables apart from the fact that they may already have their own suppliers. These include factors such as the quality of the vegetables, freshness, price, appearance, colour, uniqueness and whether vegetables are locally grown or not.

Other factors which influenced the decision making of customers to purchase processed vegetables were own production (where the supermarket did its own processing, hence there was no need for them to buy from elsewhere) and also if the supermarket didnot sell processed vegetables (there was no need for them to buy since they did not sell the processed vegetables in their shop).

It can therefore be concluded that vegetable processors should take into consideration all the factors they can control and that affect their customers' decision making on buying processed vegetables. This will help them to produce vegetables that meet customers' demand and avoid unnecessary wastages.

4.4 Results for the Schools survey

In assessing the potential market for processed vegetables, ten schools were also interviewed. Preferred schools were public schools within a 20km radius of Alice town and whose Schools Nutrition Feeding Schemes are financed by the government. The purpose of taking schools within the 20km radius of Alice town was due to time and financial constraints since distant schools were more expensive to reach. At the same time, these schools are closer to the processor and they can be served more efficiently than those that are far away. Purposive sampling was used to select the schools. The main reason why public schools were chosen was because they had a School Feeding Scheme which includes vegetables. A self administered questionnaire was used to collect data from the schools and the results of the study are discussed below.

4.4.1 Occupation of the respondent

Basically the principals were the target respondent. But in the event that the principal was not present or felt like there were not the suitable respondent, the principal delegated an educator particularly the one who is part of the Schools Nutrition Programmes committee. This was preferred since these educators have better information about activities involved in the Schools Nutrition Programmes and sometimes the interview involved more than one respondent. Having more than one respondent was helpful as it improved the quality of information that was gathered since it was not biased towards one person's thoughts. And where the respondent was not sure of the response, they would ask their counterpart to respond.

4.4.2 School feeding schemes and vegetable products bought

All the schools included in this study have school feeding schemes in which learners are supposed to eat certain amounts of vegetables as part of their meal. However, learners do not eat vegetables daily, but eat them at least twice a week. The Department of Education is said to be the one which draws the menu that schools must follow and ensure that each learner gets recommended energy calories per day. The vegetables that are often bought by the schools include cabbages, carrots, butternuts, spinach, onions, pepper and peas. However, it was noted that vegetables bought differ across schools, depending on the availability and price variability (cheaper vegetables more preferable).

4.4.3 Budget for the schools feeding scheme and sources of finance

The study showed that school budgets for the feeding schemes varied from as little as R12 000 to as much as R75 866 per term. The budget depended on the number of learners in that school since the funds are allocated per learner. Therefore, the more the number of learners the larger the budget was. The school feeding schemes are financed by the government (Department of Education). The money is allocated to each school at once for the whole term.

4.4.4 Decision making on what to buy, where and in what quantities

Each school has a School Governing Board (SGB) or School Procurement Committee, which is made up of principals (*in some schools*), educators and parents. The parents in the school nutrition programme are the ones who prepare the meals for the learners and are also involved in decision making. Thus, decisions on what to buy, from where and in what quantities are collectively made by everyone who is part of the school nutrition committee. Therefore, before any final decision is made, it has to be agreed upon by the whole committee otherwise it will not be passed. This scenario offers a complicated situation for potential suppliers since for them to be able to supply these schools, they need to convince the whole

group of committee members (board members) which is very difficult to do. The difficulty in convincing all committee members arises due to various reasons. Some of the reasons that were noted included that, amongst the committee members, some may have their own favourite suppliers such as relatives, friends and favourite supermarkets hence unless this new supplier falls into these categories, it might be impossible for the committee to support it. Another factor which was said to be considered when choosing where to buy was transport cost, thus if the supplier offered delivery services, then they were more preferred and in the event that there was no transport, nearness to the supplier was considered so as to minimise transport costs.

4.4.5 Delivery of goods and frequency of vegetable purchases

Some of the respondents from the schools indicated that the suppliers of the products are the ones who delivered the products they bought for the school nutrition programmes. However, some indicated that they used hired transport (either supplier's transport or any other available transport for hire). The respondents indicated that they bought vegetables for the whole month at once, except for some of the vegetables which are highly perishable such as cabbages, tomatoes and spinach. As a result, vegetables purchases were done weekly for vegetables such as spinach, cabbages, and carrots and once for the whole month for potatoes, onions and butternuts. In some cases, even for those highly perishable vegetables, purchases were said to be done at once and arrangements were made for deliveries. In this case, the supplier was the one delivering the vegetables each time they were wanted by the school.

4.4.6 Vegetable quantities bought and prices

The quantities currently bought varied from school to school due to differences in numbers of learners. But for each school, the quantities were large enough to cater for one or two or three weeks depending on how often they bought the vegetables. For instance, some schools indicated that they bought four to eight pockets of butternut for two weeks and one bag of cabbage for a single week and so forth. It was indicated that prices varied from source to source and by seasonal variations, thus sometimes the prices were high due to shortages in the market whilst at times the prices were very low to an extent of getting a head of cabbage at only R5.

4.4.7 Interest in buying processed vegetables produced by the AgriParks

Having had an overview on how the Schools Nutrition Programmes were operating, and having known that they bought vegetables as part of their menu, interest was now to know if these schools could be part of the potential market for the processed vegetables sold by the

AgriParks. As such, respondents were asked to give their opinions on whether they thought their schools could be interested in buying some of their vegetables from the AgriParks.

The responses from the respondents varied with the majority of them indicating that even if they had interest in the vegetables, they could not make a final decision as to whether or not the schools could buy from AgriParks. Some of the respondents indicated that the interest was there but they first wanted to know if the AgriParks could (i) deliver the vegetables to them; (ii) if the AgriParks would be consistent; and (iii) if the AgriParks could be willing to discount them. These were some of the conditions that were given by respondents from some schools. One of the respondents indicated that the school used to buy from the AgriParks but it had to stop due to various reasons which included delivery problems and some other procurement changes. As such there was need to sit down again with the procurement committee to see if they could resume buying from the AgriParks.

Judging from individual respondents' point of view, most of the respondents were interested in trying the processed vegetables sold by the AgriParks. The respondents admired the convenience of the processed vegetables as they thought it could be less work to the cooks. However, the challenge that was observed across all the schools included in the study was that, decisions were supposed to be made by the whole schools nutrition committee, hence, it was impossible for them to indicate whether or not they would buy from the AgriParks. One educator also commented and said *''I wonder if the Department of Education would approve us buying these processed vegetables''*. This comment showed that the Department of Education could probably have a hand in recommending the best buy for the School Nutrition Programs. As a result, emerging sellers such as the AgriParks need the backing of the authorities such as the Department of Education, for them to be able to sell their produce to the schools otherwise they cannot be able to do so.

Another challenge that was mentioned in one of the schools related to the mode of payment. It was indicated that payment is strictly in the form of a cheque and if the AgriParks does not accept these cheques just like some of the supermarkets as was indicated, it therefore meant that they could not buy from them. Further, some indicated that they could only be able to buy from the AgriParks if they can deliver the vegetables to them and in a consistent manner. Forty percent of the schools noted that they already had their own suppliers hence they could not buy from the AgriParks. Another barrier that limited interest from some of the schools was the fact that the vegetables are sold in a processed state and hence need cold room facilities which are not available in those schools. As such, schools indicated that they could only buy from the AgriParks if they were willing to make deliveries to them frequently as per

demand. In short, almost all the respondents from the selected schools showed some interest in the processed vegetables that were presented to them, but there were barriers which prohibited them from making a precise decision as to whether or not they would buy from the AgriParks.

4.4.8 Prices of the AgriParks products

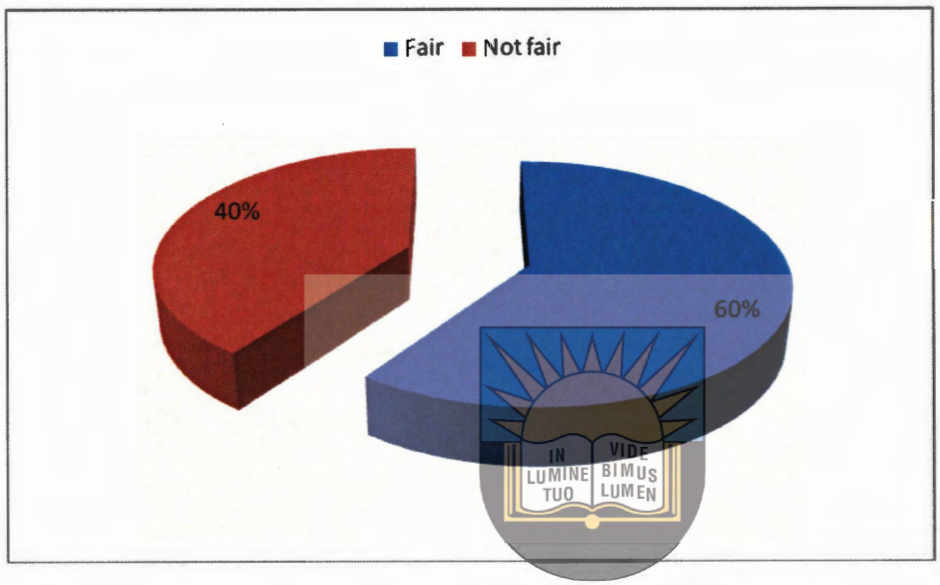


Figure 4.4.1: Distribution of respondents with respect to their opinion on prices

There were mixed opinions as to whether or not the prices charged by the AgriParks were fair with the majority (60%) of the respondents indicating that the prices were fair whilst some (40%) indicated that there were not. Those who indicated that the prices were high were comparing the AgriParks prices with the prices they were currently buying the vegetables . Since the schools sometimes utilise informal sources for their vegetable sources, it is possible that they tend to negotiate for very low prices and since the sellers will be desperate for money, they sell these vegetables at very low prices. Sometimes the vegetables were not of very good quality, hence they were sold at very low prices by the respective producers. In the case of vegetables bought from the shops, sometimes the vegetables were on special hence they managed to buy in bulk at very low prices.

4.4.9 Ratings of vegetables sold by the AgriParks

Respondents were asked to give their opinions on various vegetable attributes which included quality, texture, appearance, packaging and overall acceptance. The respondents were asked to rate the samples of vegetables that were presented to them by ticking the appropriate numbers from 1 being poor' and 5 being excellent (1= poor; 2= fair; 3= good or satisfying; 4= very good; 5= excellent).

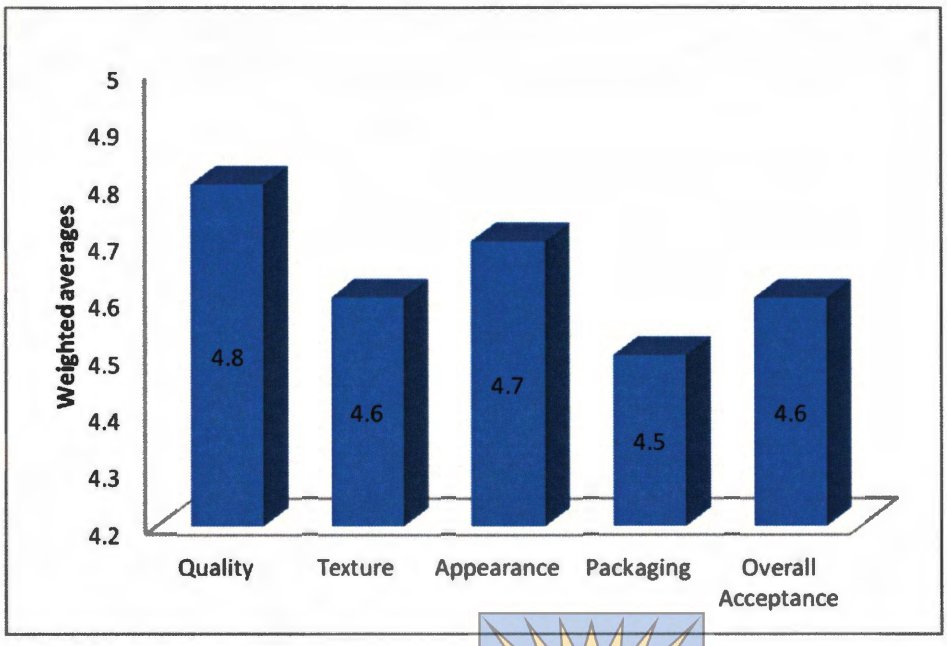


Figure 4.4.2: Ratings for the sample vegetables

The ratings shown in the Figure 4.4.2 above show the weighted average scores out of five the maximum score on a 5-point scale. The results of the study showed that the vegetable samples that were presented to them were very good to excellent in terms of all the attributes that were examined as shown by average weighted scores 4.5; 4.6; 4.7; and 4.8 for packaging, texture, appearance and quality. However, suggestions were made to improve on the packaging and texture of the vegetables especially spinach and coaslow. Thus, some preferred finer texture than a coarse one. But whilst there were these suggestions, the results show that the vegetables received high acceptability as supported by an overall score of 4.6 out of 5, the maximum score. Hence this means that as far as the products are concerned, there have no problems, but the problem lies within the market itself.

4.4.10 Concluding remarks

Whilst, purchase from the AgriParks was said to be only possible under given conditions, it is clear that schools offer a potential market for processed vegetables. If only these barriers could be addressed and maximum support is given to small processors like the AgriParks, these processors could be profitable and offer reasonable livelihoods to struggling co-operative members. In addition to that, the results of the study showed that, the price is a very important factor that affects where the schools buy their vegetables. As such, small agro-processors should be in a position to adjust their prices in order to compete or beat other existing suppliers. Also, the agro-processors should study weakness of their rivals in order to be able to beat them. For example, if a particular school indicates that it uses hired transport, by offering their own transport to deliver produce, this can make potential buyers to be

willing to buy from them. Another factor that was highlighted was inconsistency of supplies. Thus in order to sustain a market, the processors (supplier) should be consistent in business.

CHAPTER 5: RESULTS OF THE VEGETABLE TASTING RESULTS

5.0 Introduction

This chapter presents the results of the vegetable tasting procedure that was done in Fort Beaufort at Spar Supermarket. The aim of the vegetable tasting procedure was to determine customers' perceptions about buying processed vegetables and it sought to do so through answering the following questions (1) what vegetable types do consumers prefer most? (2) What attributes do consumers consider most when buying processed vegetables? And (3) what is the overall acceptability of selected vegetables included in the tasting procedure. The results will include discussions on demographic factors, economic factors, tasting of vegetables and factors that influence consumers to buy vegetables. The chapter begins by presenting demographic factors such as gender, age, marital status and level of education followed by economic factors such as employment status. The chapter also includes discussions on attributes that customers consider when making decisions to buy processed vegetables and finally presents results on ratings for the four vegetables that were included in the vegetable tasting.

5.1 Gender of respondents

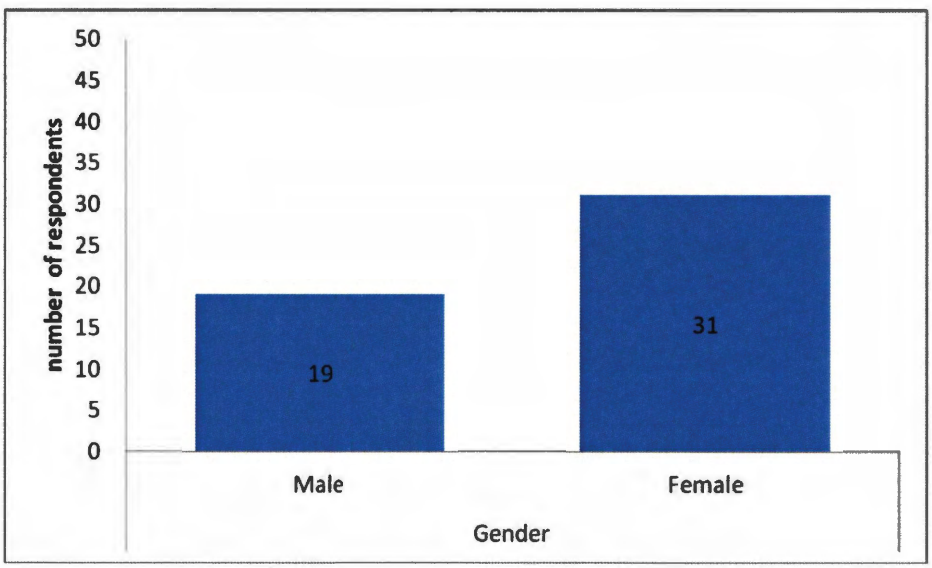


Figure 5.1: Distribution of respondents with respect to gender

Of the 50 respondents who were interviewed, 31 (62%) were females while 19 (38%) were males. Gender of respondents can be so influential when it comes to vegetable purchasing. Expectations are that most females are more concerned about buying vegetables than males. This view is supported by Gadaga *et al.,* (undated) in a research on the potential for marketing processed fruits and vegetables in Harare, Zimbabwe in which a group of female heads of households was chosen based on the fact that females are the ones who usually make decisions on what to purchase for the household. In addition to that, the findings of the research are also supported by Correia and Rola- Rubzen(2012) in a study on what attributes consumers seek when buying vegetables in Timor Leste in which it was found that the majority of the respondents (89%) were females (89%) and 11% were males. Rola- Rubzen (2012) indicated that having more female respondents was not surprising since women are responsible for purchasing food in the household.

5.2 Age of respondents

According to (Gajjar, 2013), age and life-cycle has a potential impact on consumer buying behaviour. That is to say, consumers change their trends in purchase of goods and services with the passage of time. Hence, age can be so influential when it comes to the purchasing behaviour of people.

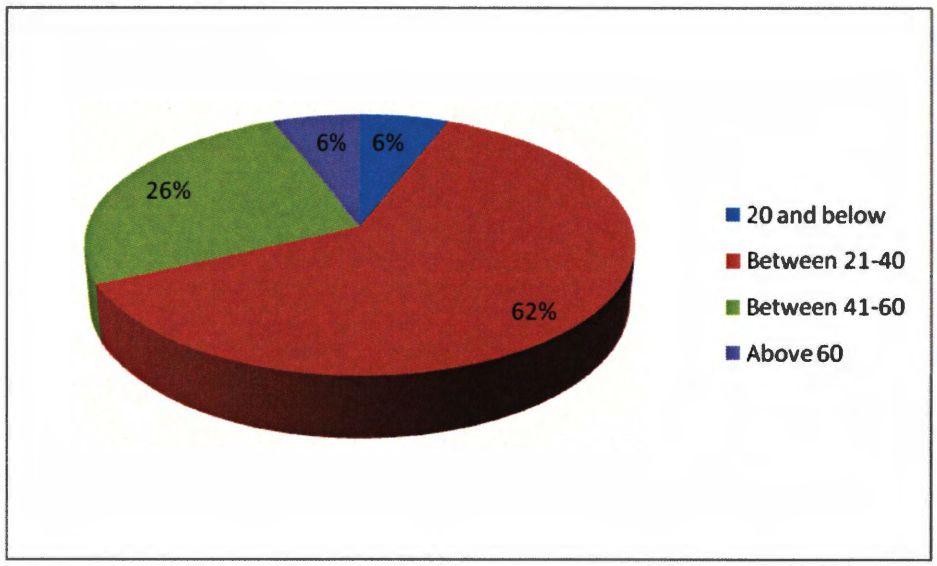


Figure 5.2: Distribution of respondents with respect to age

As shown in Figure 5.2, the majority of the respondents (62%) were aged between 20 and 40, 26% of the respondents were aged between 41 and 60, whilst the remaining 12% was distributed equally between age groups of 20 and below and 60 and above. The results of the

study revealed that the majority of food shoppers are those that are aged between 21 and 40 years. The findings of the research are in line with a study that was done by Gadaga *et al.*, (undated) in Zimbabwe which reported that the majority of the respondents 87% were between the age group of 20- 49.

5.3 Marital status

There was an equal distribution of respondents with respect to marital status. Fifty percent of the respondents were married and another 50% represented all those who were single and these included single respondents with or without children, divorced and widowed respondents. According to Daria and Safaei-Sara (2011) a person's marital status is the most influential factor in a person's buying behaviour. This is the reason why respondents were categorised on the basis of whether there were married or not.

5.4 Level of education

Level of education plays a major role in influencing consumer behaviour in purchasing vegetables. For instance, if one does not know the benefits of consuming vegetables, the possibility of him or her buying vegetables is likely to be lower. A study by Bihan *et al.*, (2010) on socio-demographic factors and attitudes towards food affordability and health associated with fruit and vegetable consumption in a low-income French population showed that the respondents with the lowest education level carried the highest risk of low consumption of vegetables. Hence, knowing the education levels of respondents can help the marketers to see if there is need for educating or doing awareness campaigns in which people are made aware of the potential benefits of eating vegetables. This could probably increase the willingness of the consumers to buy and thereby increasing the potential market for the vegetables. Figure 5.4 shows the distribution of respondents with respect to their level of education.

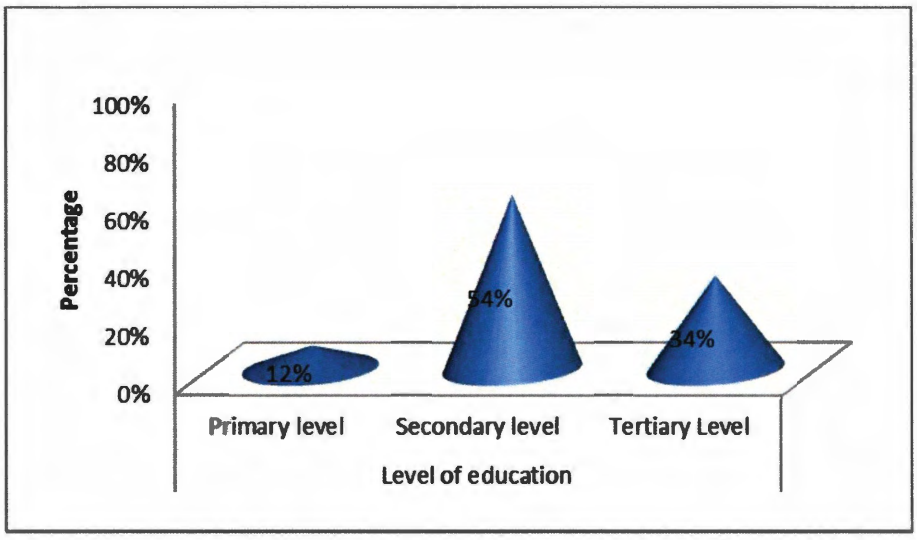


Figure 5.4: Distribution of respondents by level of education

The results of the vegetable tasting procedure show that the majority of the respondents (54%) completed secondary education (high school level), 12% of them completed tertiary level whereas 34% had attained primary education only. All together, those who completed secondary and tertiary levels were 66%. Having 66% of the respondents having completed secondary and tertiary education is actually not surprising considering that Fort Beaufort is an urban area and as such it is expected that people who stay in an urban area should at least have secondary education (Pam Golding, undated). This is because accommodation in a town is more expensive, hence for one to reside there, they should have a job to be able to pay rentals or be a dependent to someone who works. The fact that most of the respondents went up to secondary level probably means most respondents are aware of the benefits of consuming vegetables and hence a high frequency of vegetable consumption is expected. This also means that there could be a high market potential for the processed vegetables.

5.5 Employment status

Knowing the employment status of respondents was relevant in this study since it explains the potential of customers to purchase vegetables. Shah (2010) noted that the customer's economic situation has a great influence on his buying behaviour. Thus, if the income and savings of a customer are high then they will purchase more expensive products. On the other hand, a person with low income and savings will purchase inexpensive products (Shah, 2010). This implies that at low-income levels, the demand for vegetables tends to be small. This is largely due to the fact that low-income households must prioritize the fulfilment of their basic energy requirements first to avoid hunger and for them, vegetables tend to be an expensive source of energy (Ruel *et al.*, 2005).

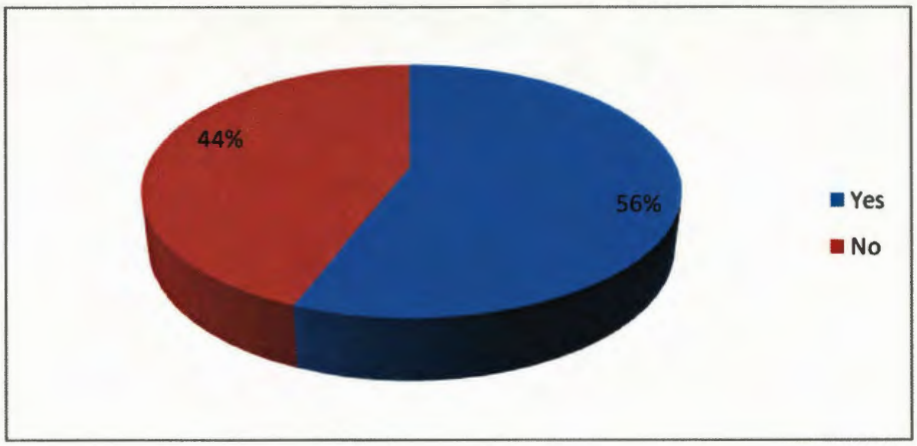


Figure 5.5: Distribution of respondents by employment status

Fifty-six percent of the respondents indicated that there were employed while 44% of them indicated that they were not employed. Considering that most respondents went up to secondary level, expectations are that most of them will be employed at least even in low paying jobs. Figure 5.4 shows that 66% of the respondents completed secondary and tertiary education, but in Figure 5.5 it is shown that 56% of the respondents were employed. This is perhaps due to that some of the respondents who completed these levels had reached retirement age. Also, due to job scarcity as was indicated by a study by the Amathole District Municipality IDP (2012), it is possible that some of the qualified respondents may have failed to get jobs, hence remain unemployed. As such, it is not all potential workers who are employed. Whilst this is the case, it does not necessarily mean there may be no potential market for the processed vegetables. Having over half (56%) of the respondents working, there is quiet a promising potential market for the processed vegetables for as long as the vegetables receive high acceptability by potential users.

5.6 Consumption of dry vegetables

Many people participated in the vegetable tasting experiment in which they tasted the vegetables that were offered to them. The results of the experiment are given in Figure 5.6 below.

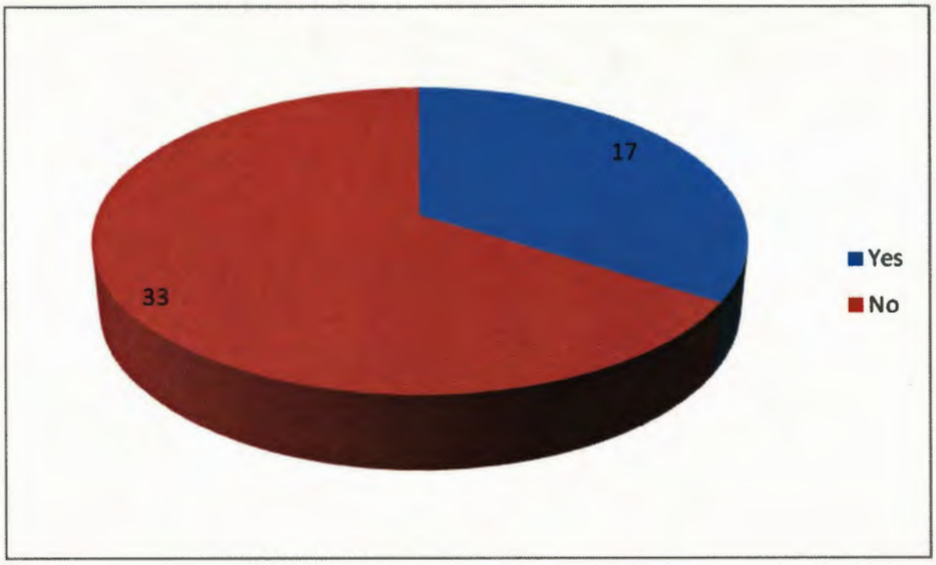


Figure 5.6: Distribution of respondents with respect to consumption of dry vegetables

Out of 50 respondents that were interviewed, 33 indicated they had not tasted dry vegetables before, whilst 17 did. Some of the reasons that were given by respondents for not having consumed dried vegetables were that, fresh vegetables were always available, they were not aware of where they could find these vegetables, others gave reasons of preferences (that they preferred fresh vegetables than dry ones) and others mentioned that they did not know how to dry the vegetables as well as to prepare the vegetables. For those who had consumed dry vegetables before, most of them said they got the vegetables from friends and of course a few indicated that their mothers dried them. The respondents who said they had tasted dry vegetables before mentioned that they had tasted cabbage, pumpkins and *covo (a green leafy vegetable)*. A research by Gadaga *et al.*, (undated) in Zimbabwe showed that dried vegetable consumption was more pronounced among low income households and the majority of them who consume dry vegetables actually processed the dry vegetables at home (66% of the total respondents) and 58% of the total respondents purchased them from supermarkets. In this study, the absence of knowledge about the processed vegetables may reduce the market potential. Hence, to increase the size of the potential market for the vegetables, vegetable processors should make potential customers aware of the vegetables through advertising and market campaigns.

5.7 Frequency of vegetable consumption

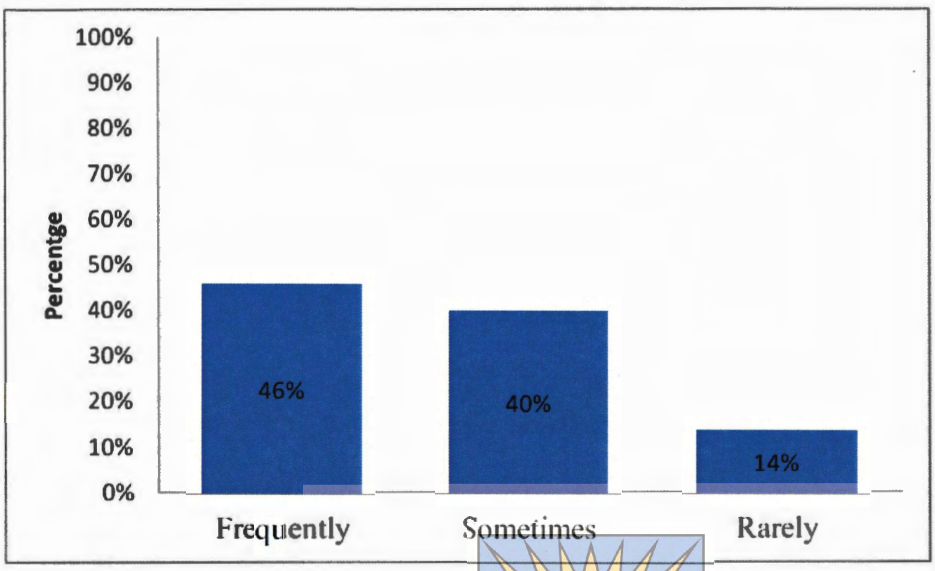


Figure 5.7: Distribution of respondents by frequency of vegetable consumption

Forty-six percent of the respondents said they ate vegetables frequently, whereas 40% said they sometimes ate vegetables and 14% rarely ate vegetables as indicated in Figure 5.7. The findings of the current study are in line with the findings of Bihan *et al.*, (2010) whose results showed that 30% of the respondents did not eat vegetables every day. The frequency in vegetable consumption can be explained by the economic state of respondents. Considering that Fort Beaufort is a small town and has limited industry, most of the employed people are employed in low and medium paying jobs. As such, they may not afford to buy vegetables on a daily basis. In addition to that, some people who were interviewed may have come from surrounding villages hence they may not have access to vegetables every day especially if they only buy their vegetables from town. This is due to the perishable nature of vegetables, which limits the quantities of fresh vegetables bought. Therefore, in this case, introduction of dry vegetables in the market would enable consumers to have access to vegetables every day of their life. As such, there may be a potential market for these vegetables particularly if reduced consumption is due to lack of vegetables in their villages.

5.8 Reasons why people do not eat vegetables frequently

The demand for vegetables increases with higher incomes, although the share of the total expenditure allocated to vegetables tends to decline (Ruel *et al.*, 2005). This means that people with high incomes often demand more vegetables since they can afford them but since they have high incomes, the proportion of income spent on vegetables is often smaller. However, for low income households the fulfilment of their basic energy requirements to

avoid hunger is of high priority and vegetables are not normally considered a source of cheap energy since they tend to be more expensive compared to other food products (Bihan *et al.*, 2010). Figure 5.8 below therefore presents the distribution of respondents with respect to the reasons why they do not eat vegetables frequently.

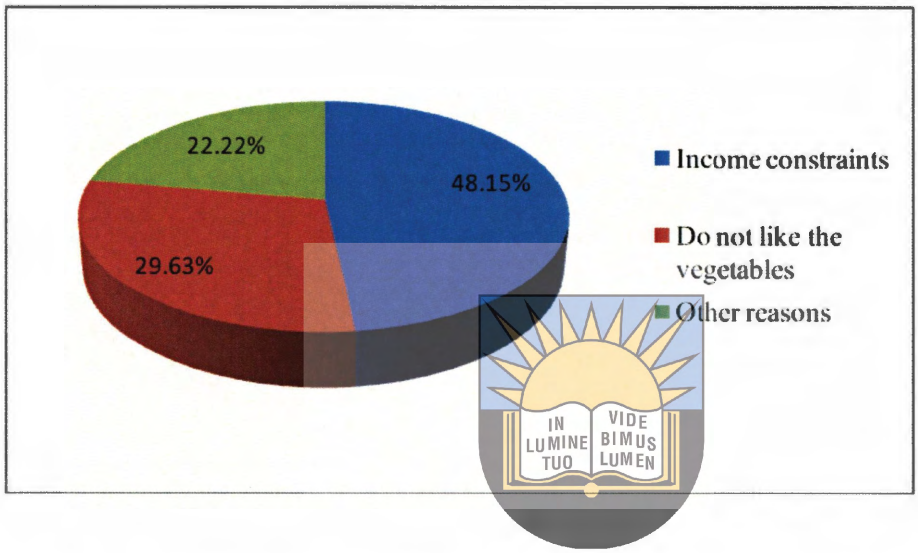


Figure 5.8: Reasons why respondents did not eat vegetables frequently

Out of all the respondents (54%) (as shown in Figure 5.7) who indicated that they did not eat vegetables frequently, 48.15% of them mentioned that they did not eat vegetables frequently due to income constraints, whilst 29.63% indicated that they did not eat vegetables frequently simply because they did not like them and the remaining 22.22 % gave other reasons of not eating vegetables. A common reason that was given was lack of time to prepare the vegetables. As the results depict, the major constraint to vegetable consumption is lack of adequate incomes. This is in line with findings of Bihan *et al.*, (2010) who found that the determinant of low vegetable consumption was the absence of financial means for buying the vegetables daily. Potential market for the vegetables may be reduced due to lack of income.

5.9 Awareness of the benefits of consuming vegetables

The majority of the respondents who were interviewed showed that they were very much aware of the benefits that came through the consumption of vegetables as shown in Figure 5.9 This was shown by the fact that 96% of them said they knew the benefits and gave examples of such. Among other benefits, these are some of the benefits that were stated; health benefits, increase in blood (for instance, if one eats beet-root), vitamins, de-toxicating, fibre and weight loss. Only four percent said they were not aware of the benefits of consuming

vegetables. These results could be linked to the fact that the majority of the respondents went up to secondary level (high school).

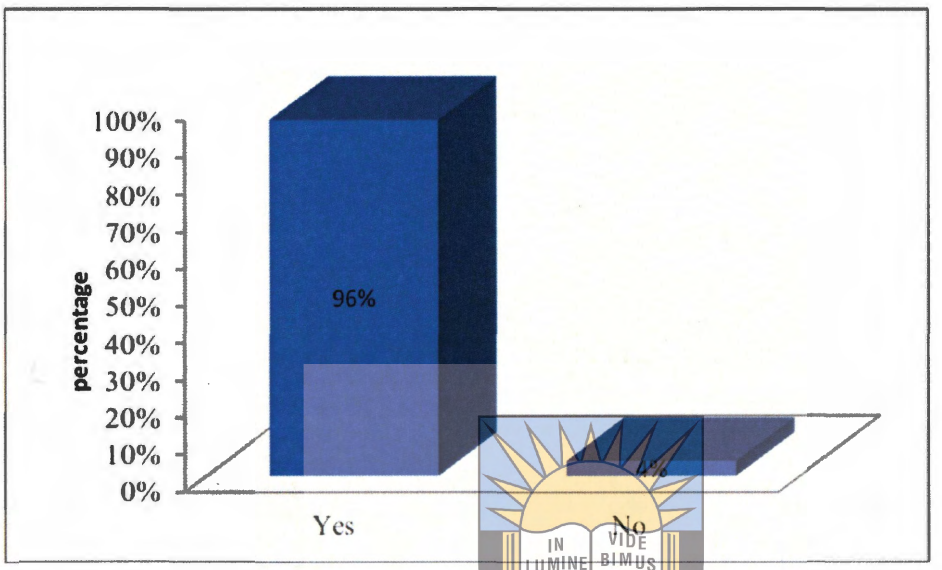


Figure 5.9: Distribution of respondents with respect to awareness of the benefits of consuming vegetables

5.10 Respondents' perceptions about dried vegetables

Of the 50 respondents that were interviewed, as shown in Figure 5.10 below 96% of them said that they liked dried carrots and only 4% of them disliked it. Furthermore, 86% of the 50 respondents mentioned that they liked cabbage and 14% of them disliked it. The results of the study moreover showed that 72% of the respondents liked spinach and 28% of them disliked it. Finally, of all the respondents, 90% mentioned that they liked the mixed vegetables whilst only 10% disliked it. On average, 86% of the 50 respondents liked all the vegetables whilst 14% disliked them. These positive results could be an indication of a potential market of these dry vegetables. This could also suggest that customers have positive perceptions about buying processed vegetables.

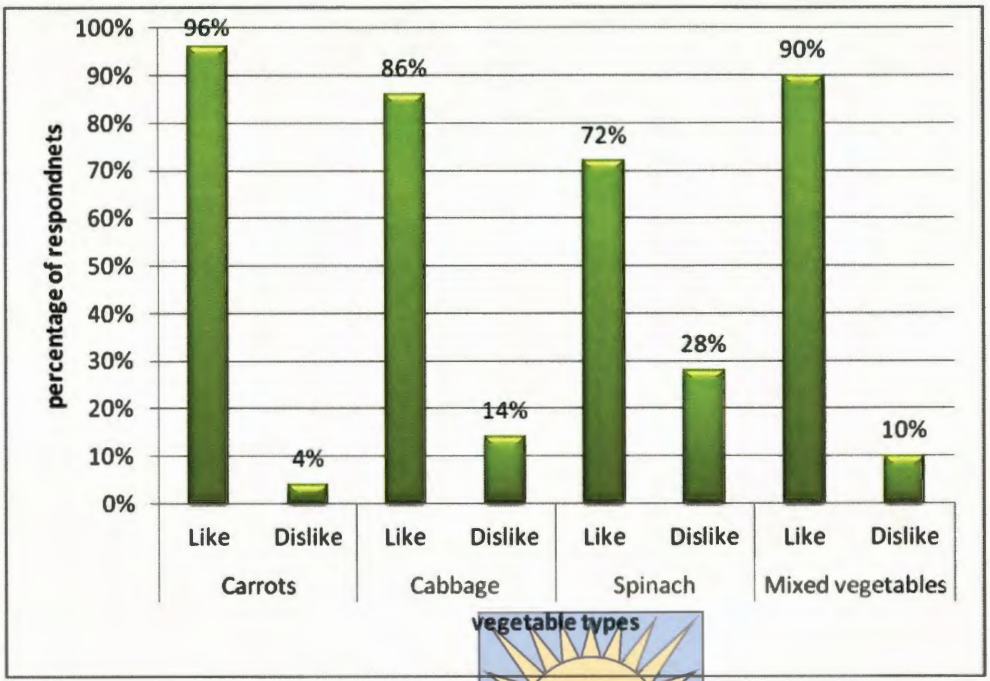


Figure 5.10: Distribution of respondents with respect to liking and disliking of the four vegetables

5.11 Attributes considered by customers when purchasing vegetables

Respondents were asked to indicate the relative importance with respect to various attributes they may consider during decision making in purchasing vegetables. A 5-point scale was used in rating the attributes shown in the graph (1= attribute not important at all; 2= attribute not important; 3= neutral; 4= attribute important and 5= attribute very important.

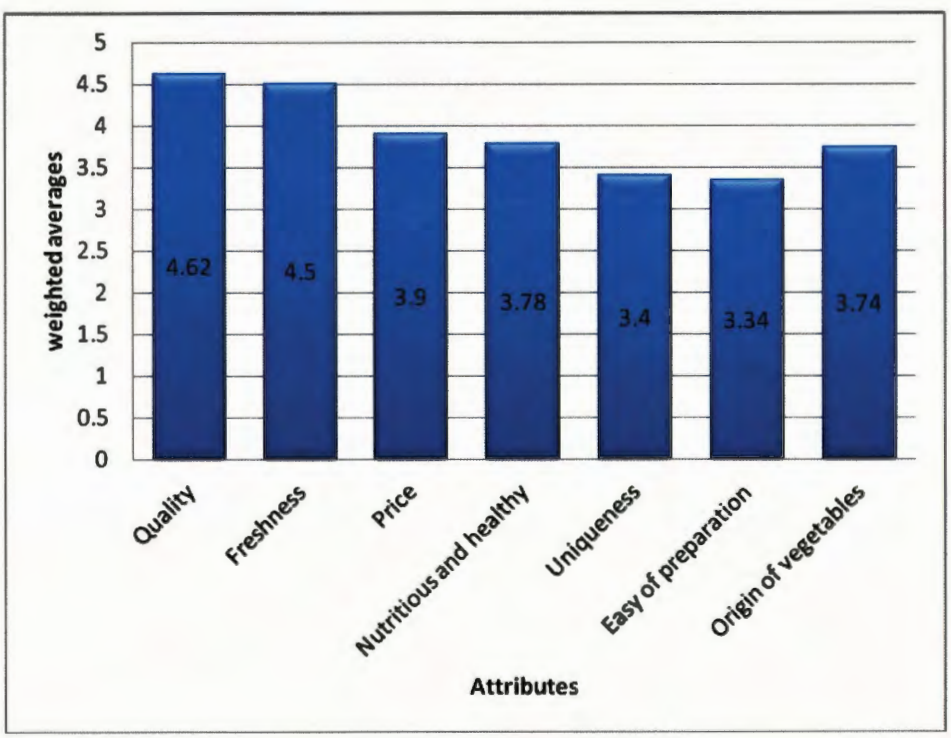


Figure 5.11: Distribution of respondents with respect to the importance they attach to various attributes when making decisions to purchase vegetables

Results from the study suggest that quality matters a lot to customers when they are buying vegetables as shown by an average score of 4.62 on a 5-point scale. This therefore means that decisions of customers to purchase certain vegetables are significantly affected by the quality of the vegetables. In this study, 5 represented an attribute being very important and since the weighted average is close towards 5, we can therefore say that quality of vegetables is very important to customers. These results are consistent with the findings of the Food Processing Center (2002), in a study on Chestnut Market Opportunities Assessing Upscale Restaurant Interest in Value-Added Chestnut Products. In this study chefs were asked to rate the importance of quality when selecting chestnut products for their restaurant and the results of the study showed that quality was rated as being very important. Another study by (Food Processing Center, 2001) on how to Attract Consumers with locally grown products showed that quality was very important.

Alongside with quality, freshness of vegetables was also indicated as another very important attribute that customers consider when making decisions to purchase vegetables. Freshness scored a weighted average of 4.5 inclined towards 5 (the maximum score). The results from this study are also similar to those from the study by the Food Processing Center (2002) which showed that 94 percent of the Chefs indicated that product freshness was either very or extremely important.

Price, nutritious and healthy and origin of vegetables were rated 3.9, 3.78 and 3.74 respectively. The weighted averages are almost close to four and this suggested that the three attributes are important to customers when they are making decisions to purchase vegetables but not as important as quality and freshness attributes.

The results of the study present an interesting pattern, particularly, with respect to price attribute reason being, in a normal circumstance, we would expect individuals to consider price as the most important attribute more than any other attribute, for instance due to the fact that close to half of the respondents were not employed (44% shown in Figure 5.5). In addition to that, the results also show that 56% of the respondents could not eat vegetables frequently due to income constraints (Figure 5.8). However, given that price had a score of 3.9 it means that quite a good number are concerned with price when making purchasing decisions, hence, making price an important attribute.

A research conducted by the Agriculture and Agri-Food Institute of Canada (2007) on Consumer Perceptions of Food Safety and Quality survey showed that 31 percent of consumers ranked nutrition as a top of priority issues for food at home consumption as compared to 24 percent in 2004. These findings attach considerable importance to nutrition and health of food and this influences what consumers ultimately buy. The results of the study show that nutritious and healthy scored 3.78 and this means that it is an important attribute that individuals consider when making decisions to purchase vegetables.

In addition, Ngiqi *et al.*, (2010) also, pointed out that in many developing countries, recent improvements in income have led to the emergence of middle and high income consumers that are more concerned about medical health and safety of vegetables they eat. These have been reasons why many consumers attach considerable importance to nutrition and health attributes when they are making decisions to buy vegetables. The same study by Ngiqi *et al.*, (2010) revealed that increasing proportions of these middle and high income groups consumes fresh produce (especially leafy vegetables) as salads, or cooked, blanched, and juiced. Considering that this interest in vegetables that are nutritious and healthy is increasing proportionally to consumer incomes, there[illegible]obably means the interest of consumers to pay is also higher. As a result, vegetable producers strive to produce vegetables that meet these consumer requirements as this would help boost their participation in the market.

Uniqueness and ease of preparation scored the least among other attributes. They had scores of 3.4 and 3.34 respectively. This probably shows that respondents who participated in the vegetable tasting do not attach too much importance to the two attributes when making decisions to purchase vegetables. However, since they are above score 3, the neutral point, it means there are also important attributes. This is in line with findings from a research by the Food Processing Center (2002) in which Chefs attached high importance to the uniqueness of the chestnuts and even suggested that the growers should work hard to promote the chestnuts quality, uniqueness and locally produced heritage.

5.12 Ratings from tasting experiment

Respondents were asked to rate selected vegetables, namely spinach, carrots, cabbage and mixed vegetables (spinach, cabbage and carrots) with respect to various attributes namely taste, texture, colour, packaging, appearance and overall acceptability. The goal of the vegetable testing procedure was to determine acceptability of the vegetables by consumers and not to provide data that will be generalised to determine the size of the potential market. This was thought to be very important since it is always good to assess whether ones'

products are acceptable in the market so as to see whether or not it is worth producing those products. The respondents were asked to taste the vegetables and rate them by ticking the appropriate numbers from 1 being poor' and 5 being excellent (1= poor; 2= fair; 3= good or satisfying; 4= very good; 5= excellent).

5.12.1 Spinach

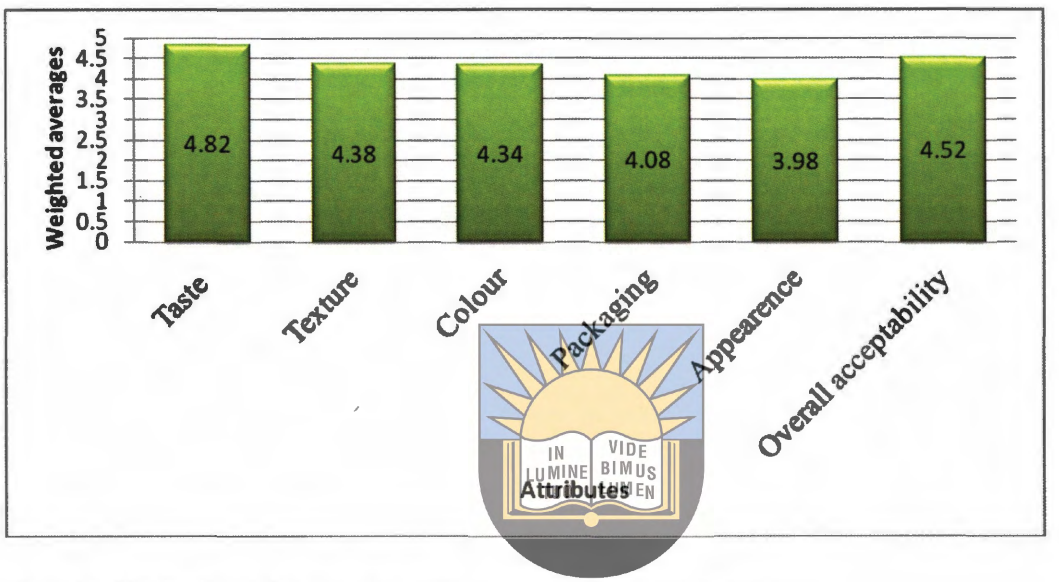


Figure 5.12: Ratings for spinach with respect to various attributes

Respondents rated spinach close to excellent in terms of taste giving a weighted score of 4.82. Texture, colour, packaging and appearance were rated to be very good with average scores of 4.38, 4.34, 4.08 and 3.98 respectively. The overall rating by respondents was 4.52, which is closer to 5 the maximum score on the 5-point scale. This means, respondents liked the spinach. This therefore could suggest that there is a potential market for spinach.

5.12.2 Cabbage

With respect to all the attributes that were assessed, respondents showed that they liked all of them very well as shown in Figure 5.13. Taste was ranked much higher than the rest with a score of 4.46 followed by texture with a score of 4.38. Colour, packaging and appearance scored almost the same with scores ranging from 4.28, 4.16 and 4.2. Overall acceptability was 4.68, which is closer to 5, the maximum point on the scale. This therefore means that respondents liked the cabbage very well and hence, it probably means there is a potential market for the cabbage in this area of study.

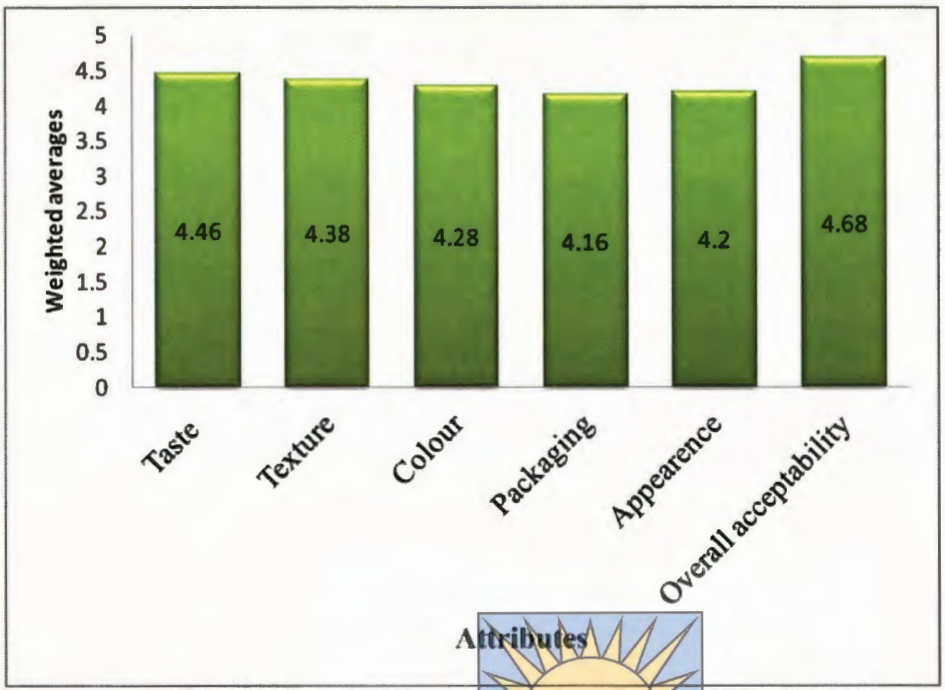


Figure 5.13: Ratings for cabbage with respect to various attributes

5.12.3 Carrots

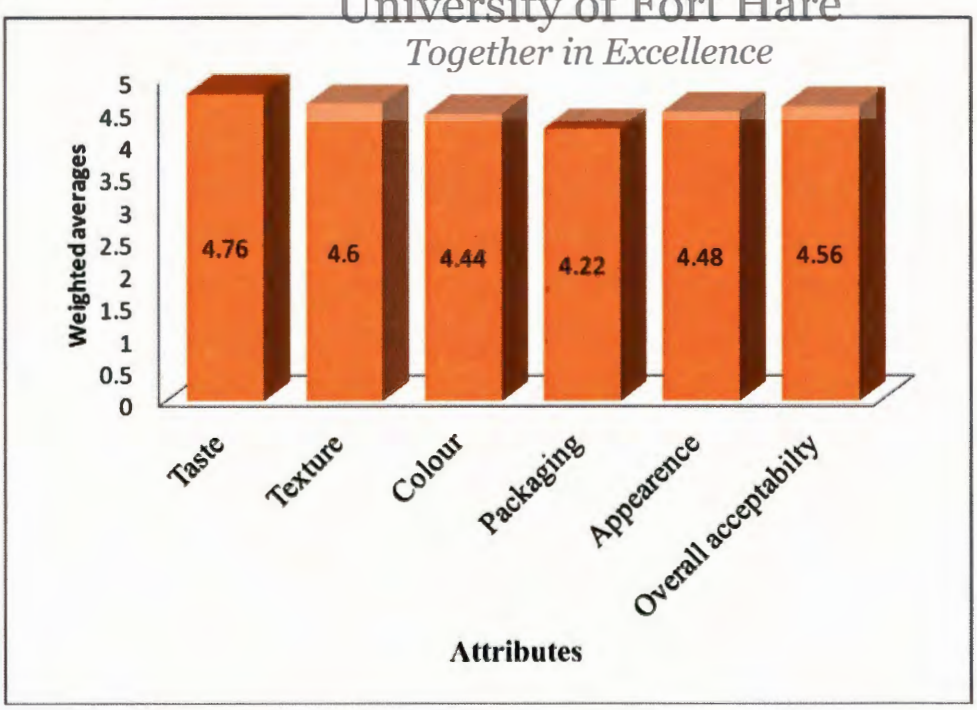


Figure 5.14: Ratings for carrots with respect to various attributes

The majority of the respondents liked the taste and texture of carrots very much. This is shown by the high ratings of 4.76 and 4.60 respectively. Colour, packaging and appearance were rated above four, but of course, cannot be equated to scores of taste and texture. On

overall, carrots were rated to be very good. This means that there is a potential market for carrots.

5.12.4 Mixed vegetables

The results from the vegetable testing experiment suggest that taste of the mixed vegetables was the most desirable attribute and it had a score of 4.54 and it was followed by texture which had a score of 4.4. Colour, appearance and packaging attributes had scores of 4.34, 4.22 and 3.9 respectively. Overall acceptability for mixed vegetables was 4.38 and this meant that respondents were really interested in it. These results are shown in Figure 5.15 below.

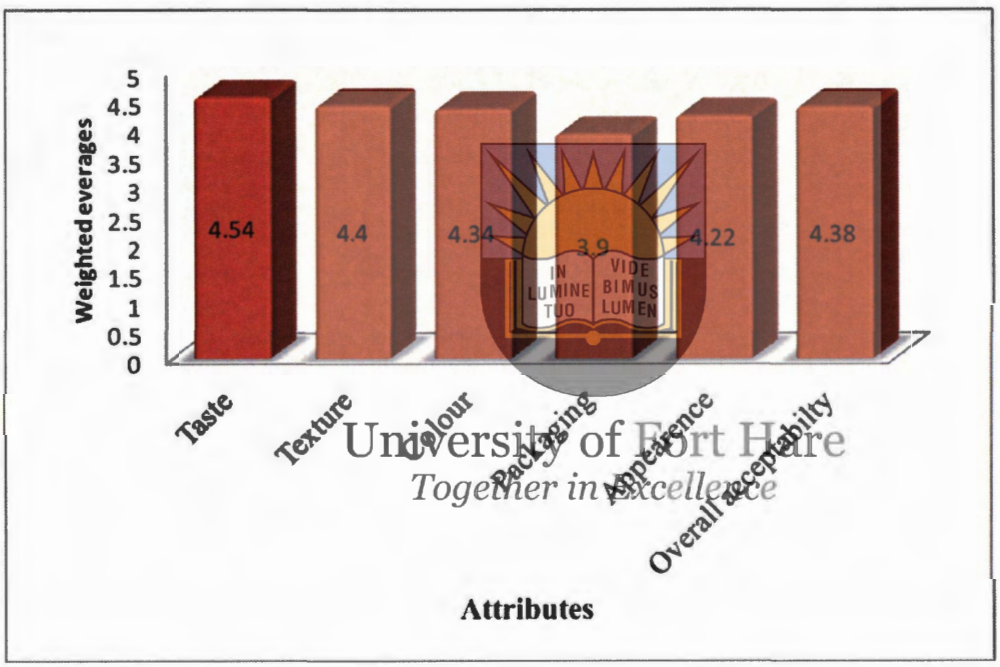


Figure 5.15: Ratings for mixed vegetables with respect to various attributes

The overall acceptability of the four vegetables ranged from 4.3 to 4.7 with cabbage having the highest score of 4.68 and mixed vegetables the least (4.38). The fact that cabbage had the highest score is surprising since 96% of the respondents mentioned that they liked carrots when they were asked to say which vegetables they liked or disliked whereas only 86% had said they liked cabbage. Therefore, it could be expected that the overall acceptability of carrots would be higher than that of cabbage. Furthermore, 90 % of the respondents said they liked mixed vegetables, but on overall acceptability, results show that mixed vegetables scored the least. But these differences could be attributed to the setting on which these questions were asked, that is to say the question on whether or not respondents liked or disliked the vegetables, was asked before the respondents tasted the vegetables whilst the question of overall acceptability was asked after respondents had tasted the vegetables. And

since ways of preparing vegetables may differ, this could have affected the responses of respondents.

In general, the results from the vegetable tasting procedure showed that respondents liked all the vegetables. Several comments and suggestions were made by respondents and these showed that respondents really liked the vegetables they tasted. Comments such as, "these vegetables are "good", "very nice and excellent" were given by various respondents. As a result of their interest in the taste of the vegetables, some respondents suggested that these vegetables should be made available in shops all the time.

The results of the study also show that the taste of vegetables was most preferred compared to other attributes, followed by texture and the ratings were common for all the vegetables. Findings from this study are consistent with those of the Food Processing Center (2002) which show that the chefs that were involved in the market test, consumers interested in local foods, and chefs from the Chef's Collaborative all indicated taste was an area of immense importance when deciding what food products and ingredients to purchase. Hence taste can be one very important factor that individuals may consider when making decisions to purchase vegetables especially for repeated purchases. That is to say if a customer buys vegetables and they taste good, the probability that this person will continue buying these vegetables is too high. In this study since taste scored very high for all vegetables and respondents actually noted that the vegetables were very nice, this probably means that consumers' probability of buying these vegetables is high and this therefore, shows that there is a potential market for these vegetables.

It also means that producers should strive to produce vegetables that meet taste requirements of consumers. For instance, from a similar study conducted by the Food Processing Center (2002), respondents suggested that the South East Iowa Nut Growers must continue to grow and produce chestnut products with superior taste and quality attributes. This was said to be of paramount importance not only when striving to broaden a product's market, but also when attempting to create a brand for that product.

Colour and appearance are other attributes that were assessed in this study. The four vegetables were rated 4.34, 4.28, 4.44 and 4.34. This means that the colour of all the four vegetables was very good and that consumers were really impressed with the colour. According to Scott *et al.*, (2004) the colour and appearance of vegetables is affected by the production techniques used in production techniques. Scott *et al.*, (2004) also stated that there has been growing demand for produce with specific attributes such as colour and appearance

(shape, size and spotlessness) by consumers and this has encouraged farmers to rely on the use of agro-chemicals in particular pesticides to control pests and diseases. It therefore means that in order for vegetable growers to produce vegetables with favourable colour and appearance attributes, there is a need for them to consider adopting such production methods. Thus, if the colour of vegetables for instance, is maintained during the growing period till harvest, these vegetables are likely to retain this colour during processing. For example, if the green colour of spinach is maintained during growth, the likelihood of having dry spinach with a green colour will also be higher.

It should not be forgotten that, especially for processed vegetables, packaging also plays a very important role and can contribute to the colour and appearance attributes. Colour combined with packaging can form very strong associations (Silayoyi and Speece, 2004). For example, a nice package complemented by a nice can forms a colourful package which alone can attract customers. The research by Silayoyi and Speece (2004) in Thailand showed that Thailand provides an excellent context for examining packaging of processed food products. Whatever the logistic considerations are, packaging is one key food product attribute perceived by consumers. Packaging is a [illegible] factor in the decision-making process because it communicates to consumers. The package's overall features can underline the uniqueness and originality of the product.

In this study, respondents were asked to rank the packaging of dry vegetables that were presented to them and results show that the packaging was, on average very good (4.08; 4.16; 4.22 and 3.9). But when compared to other attributes, packaging scored the least for all the vegetables. Therefore, this means that something should be done in order to improve the packaging of the vegetables as poor packaging can result in serious loss of sales, especially if there are other competing vegetables with excellent packaging. Also, in the event that customers attach more importance to the packaging, poor packaging may discourage customers from buying thereby reducing the potential market.

There is therefore need for producers to understand the needs of consumers so that they will know what could be the best production practices to be implemented. The reason being that customers' needs are not homogeneous; they differ from person to person and from situation to situation. This represents an increase in performance by small scale processors in order to try and satisfy all the requirements of customers or at least produce products with excellent attributes.

In conclusion, all vegetable attributes scored well above average in the evaluation as shown in Figures 5.12; 5.13; 5.14; 5.15, which probably indicates a potential market for the processed vegetables. Some attributes such as packaging and appearance scored the least of all the attributes for all the four vegetables, but that does not imply they are not important. Therefore the processors may need to improve on these attributes to increase the potential of the processed vegetables in the market.

5.13 Concluding remarks

In conclusion, the results of the vegetable tasting survey show that, consumers had positive perceptions towards different vegetables. This is shown by a high overall acceptability with all scores being above 4 for the vegetables under study. Further, results showed that there are various attributes that influence consumer preference for different vegetables and these include attributes such as quality, freshness, taste, texture and colour. Furthermore, apart from product attributes, there are other non-product attributes that can influence the choice of vegetables by consumers and these include price, packaging, uniqueness and origin of the vegetables. Socio-economic attributes such as the economic situation of the consumer and level of education can have a considerable impact on consumers' preferences for different vegetables. As a result, it remains the duty of the producer to find out about the preferences of his or her target customers so as to produce vegetables that meet their demands.

CHAPTER 6: CASE STUDIES RESULTS

6.0. Introduction

Having known the requirements of consumers, their preferences, perceptions and factors that influence them to buy certain vegetables, the question which still remains is how then do the small agro-processors market their produce? In order to answer this question, three case-studies were done on existing agro-processors.

The purpose of this chapter is to provide a discussion around penetration factors with respect to potential markets. This chapter will point out the various marketing strategies that have been used by other vegetable processors. Three case studies which provide real life scenarios that have been experienced in the agro-processing industry by three processors, namely The Fruit and Veg City-Food Lovers Market, Proveg and The Green Bean will be discussed .

The three case studies that were conducted highlight the rationale for dealing in certain products, the strategies used in marketing those products and challenges that have been faced in marketing these products. The case studies also offer an explanation of strategies that have been successful and those that have not been successful. This information is believed to serve as tangible examples of how other vegetable processors have managed their businesses and it is believed that it will be of great importance to emerging vegetable processors. The following discussion provides the results from the three case studies that were conducted. It also gives a summary of marketing strategies that can be used by small agro-processors.

6.1. Case study one: The Fruit and Veg City- Food Lovers Market

6.1.1 Brief information about the organisation

The Fruit and Veg City-Food Lovers Market is one of the fastest growing retail outlets in South Africa. The first branch was opened in 1991 and the Vincent branch in Eastlondon was opened in 1999. It has various retail outlets in the country and has been operating for 23 years. It offers a wide range of departments that cater for a wide range of customers. These include hot foods, butchery, bakery, fresh produce (processed and unprocessed vegetables), dried fruits, seeds amongst other foodstuffs.

6.1.2 Brief description of the products sold and markets served

The Fruit and Veg City-Food Lovers Market deals in a wide range of foodstuffs and these include cooked foods, baked foods, meat, processed and unprocessed vegetables. It does an in-store processing of vegetables such as carrots, butternuts, baby marrows, pumpkins and

potatoes. They do primary processing whereby they wash and chop these vegetables and then package them in airtight containers. Some of the vegetables are kept in refrigerators where they are kept fresh and sold as per customers' request.

As a retail outlet offering a wide range of products and not only vegetables, it serves a wide market ranging from general households to other retail outlets.

6.1.3 Motivation for dealing in the above products

As a client based retailer, Fruit and Veg City-Food Lovers Market generally chose to deal in a wide range of products so as to attract more consumers. For instance, a customer can get all the food stuffs he or she requires in one shop unlike having to buy vegetables from one shop and then going in search for other groceries in other shops. Such an arrangement was seen to be more convenient for busy consumers who do not have time to go around town in search of foodstuffs from different shops.

With respect to processed vegetables, rationale for selling processed vegetables was basically for convenience to those customers who use processed vegetables. In addition to that, there has been a growth in annual profit of 10% arising from the sales of processed vegetables. As a result, the firm was motivated to continue selling processed vegetables so as to get these profits.

6.1.4 Marketing strategies used

The Fruit and Veg City-Food Lovers Market, have used various marketing strategies and these include good customer service, competitive pricing (for instance, lower prices catering all customer groups, including the lowest income groups), offering a wide variety of food products, quality guarantee (quality assurance), redress refunds in the event that customers are not satisfied and good launching of products.

6.1.5 Strategies that have been found to be more useful

Basically, all the marketing strategies used by the Fruit and Veg City-Food Lovers Market have worked well for them. However, they indicated that quality assurance, redressing refunds in the event that customers were not satisfied with products and good customer service were among the most useful marketing strategies that have seen them to where they are today. The reasons for selecting the above strategies were based upon the advantages they have. For instance, doing quality checks for vegetables before selling them helped in the pricing of vegetables such that customers pay for the quality they get. If the quality is low, the vegetables were priced low hence customers did not have to complain that they were being overcharged for low quality products. If the quality was high, the price would also be

higher. Further, doing quality checks before purchasing vegetables from farmers also helped the shop to purchase high quality vegetables, which have a longer shelf life which is an advantage to consumers.

Refunding customers where they were not satisfied was yet another strategy that was found to be more useful to the Fruit and Veg City-Food Lovers Market. The reason being that, customers needed not to worry when purchasing vegetables since, if they find that the vegetables are spoiled, they would always return the vegetables to the shop and get refunds or replacement. Lastly, good customer service is also of great importance in business. Thus the way one handles customers determines whether or not customers will go back to the same shop. As such, Fruit and Veg City-Food lovers market indicated that it tried as much as possible to offer good services to all its customers.

6.1.6 Challenges that have been faced and how the challenges have been dealt with

Particularly with respect to packaged products such as potato pockets, tomatoes, there have been several returns of those products, with customers complaining that they were rotten. In such circumstances, the shop made refunds to the complainant or replaced the produce. Thereafter, the shop informed the supplier about the defective produce. The supplier would in turn give them a discount in the event that such party was the one at fault. By so doing, the shop avoided running many losses by.

6.1.7 General comments

Emerging producers should have a broader mind when approaching business. It takes hard work and patience in order to be successful. The produce to be sold should be aimed at catering for a larger consumer base and not necessarily aim at certain markets. It was also mentioned that sellers should avoid advertising products they are not sure of as this would lead to wrong information being disseminated to customers. Thus, once customers come to know that they are being wrongly informed, they may not be interested in buying from that seller again.

6.2 Case study two: The Green Bean

The Green Bean is a retail shop which is located in Beacon Bay, which is situated in the coastal town of East London. The Green Bean trades in both unprocessed and processed fruits and vegetables. It engages in an in-store vegetable processing. It supplies fresh fruit and vegetables to the public. Further, it is moving to supplying fresh processed vegetables to hotels and restaurants and is determined to satisfying them with all their fruit and vegetable requirements. It was opened in December 2013 and at the time data was collected, it had been

operating for four months. It is a sole proprietor shop which currently has three workers, which consist of a salesperson and the husband and wife who are the owners of the shop.

6.2.1 Brief description of the products sold and markets served

The Green Bean is a sole proprietor which offers a wide range of fruits and vegetables such as bananas, carrots, apples, baby marrows, butternuts, avocados, beet-root, cabbages to mention but a few. These fruits and vegetables are sold in either an unprocessed or processed state. Processed vegetables that are sold undergo an in-store processing. After which, they are packaged in trays that are wrapped in airtight plastics. Butternuts, carrots, baby marrows and baby red cabbages are among the most processed vegetables sold at the Green Bean. Apart from the processed vegetables, salad, fruit salads made from a mixture of different fruits are also sold. Further, the Green Bean sells freshly made fast foods such as hot dogs and burgers which are usually prepared as per customer request.

6.2.2 Markets served

The Green Bean serves the general public consumers (passers-by and frequent visitors to the beach), retailers, restaurants and hotels.

6.2.3 Motivation to deal in the above products

The major motivation for dealing in food products was in the fact that food is a basic need. The owner of the Green Bean explained that he used to have a clothes shop and decided to close it down due to low sales. Vegetables as part of basic food stuffs, have a great potential in bringing about profits since people need to eat, whether an economy is in a recession or not and whether the person is rich or not. Further, considering that only a few inhabitants of East London produced their own vegetables, it therefore meant they relied mostly on purchased vegetables and fruits for their consumption. Another motivation to deal in food sales was attributed to the limited food outlets in the Beacon Bay area. This offered a great business opportunity to the sole proprietor.

6.2.4 Strategies that have been used to gain entry into the market

Various strategies have been used to gain entry in the product market and these include advertising in the Go magazine, distributing flyers to passersby and the general public, advertising by use of flags mounted around beacon bay and networking.

6.2.5 Strategies that have been found to be successful

Among the strategies that have been used to gain entry into the market, networking is one of the most useful strategies that have helped the seller. Going to social gatherings such as sports, parties where the owners got to know other people was so important. Thus attending social gatherings where they discussed their social lives gave them opportunities to tell each other about their businesses, their plans and exchange business cards. In the process, the owners of the Green Bean got to get business tips, various ideas and potential customers from these platforms. Flags were also said to be helpful as customers could easily locate the shop.

6.2.6 Strategies that were not successful

More often, for emerging sellers the way they do their business is in a trial and error approach. It is therefore not surprising that there are some approaches that may be employed which turn out not to be successful. From the penetration strategies that have been used by the Green Bean, advertising in the Go magazine was among the unsuccessful strategies. The seller suggested that the failure of this strategy could be attributed to the poor colour of the magazine since it is printed only in black and white. Colourful print could have been better, but due to financial constraints, the seller had no choice but to advertise in Go magazine. Another shortfall of the magazine could be the fact that when reading magazines a lot of people only read things they are interested in and may not have time to go through everything in the magazine, hence leaving some stuff unread.

Flyers were also found not useful due to the fact that only a few people had time for having a look at them. For instance, some people refuse to take flyers when they are being distributed and some will take them, but before reading them they will throw them away. As a result the information which is carried by the flyer remains un-disseminated.

6.2.7 Challenges faced during the penetration stages

The Green Bean had been operating for only four months during the time of data collection and was thus still in the penetration phase. It was still struggling to secure its place in the food market and according to the respondents who happens to be the owners of the shop; the shop was at that time facing a lot of challenges. Among such challenges was the fact that consumers often complained about the shop's small size and the limited quantity of vegetables sold. Further, since the shop deals basically in vegetables with no other groceries being sold, people found it very difficult to travel there just to buy vegetables. This presented

a very difficult situation for the sellers since they had to convince people and give them better reasons why they had to drift from buying from their usual shops and buy from them. As such the sellers indicated that it has been very difficult to compete with existing shops.

Further, the sellers indicated that it has been difficult to buy and sell high quality fruits and vegetables as bigger shops often bought all the best fruits and vegetables from farmers. This is attributed to the fact that big shops bought in bulk and at a relatively cheaper price than smaller quantity buyers. As a result, by the time smaller quantity buyers got to the market, they would only get low quality produce which they would buy at even higher prices. This resulted in lower quality produce being sold at higher prices to the consumers. Another challenge faced by the Green Bean is a the lack of a quality check facility. The only way they judged quality was through the naked eye and this barely gave good results since it judged the fruits and vegetables from the outside (external quality) than the inside (internal quality), which hardly produced accurate results. For example, a fruit could look good on the outside yet inside it will be rotten inside.

6.2.8 How the business managed to sur[illegible]ce of challenges

At the time data was collected, the shop was running at a loss due to low sales, which resulted from the challenges it was facing. It was indicated that the Green Bean was not even operating at break-even point. Since the business needed working capital to keep it running, the owners indicated that they were using private savings which they injected into the business.

6.2.9 General comments

Since the Green Bean seemed to be facing a number of challenges, one would wonder why and how the shop was surviving. The simple answer to this question was that the owners had a vision and looked forward to improving one day. It was suggested that emerging producers should try to improve on packaging as poor packaging can de-motivate customers from buying the products on sale. Another area of improvement, especially to small agro-processors, was in the investment of quality check facilities. This was due to the fact that it is very difficult to judge quality based on external quality. One cannot tell if a fruit is good inside simply from establishing that the outside of the fruit is still fine.

6.3 Case study three: Proveg

6.3.1 Brief information about the organisation

Proveg is a vegetable wholesaler that specialises in both processed and unprocessed fresh fruit and vegetables. It is located in Wilsonia, in East London town. It has one shop and has been operating for 22 years. At first, Proveg used to be a small retail shop which grew with time until it turned into a large wholesale shop.

6.3.2 Brief description of the products sold

Proveg, sells a wide range of fresh vegetables, processed and unprocessed. Vegetables sold by Proveg include butternuts, carrots, cabbages, onions, cauliflower and baby marrows. These products are meant for resale or consumption at home.

6.3.3 Markets served

Proveg is a large wholesaler which offers a wide range of vegetables to consumer markets, other wholesalers, retail markets within East London and outside East London.

6.3.4 Rationale for marketing the chosen products

The rationale for dealing in vegetables was the fact that vegetables as part of basic foodstuffs showed a great business potential. Another driving factor was that, in the past vegetables used to be very cheap and were available in large quantities from local farmers. This minimised operating costs and offered opportunities for earning high profits.

6.3.5 Strategies that have been used

There are various marketing strategies that have been used by Proveg and these include competitive pricing, constant supplies, quality regulations, quality checks and good marketing (customer care and hard work).

6.3.6 Strategies that have been found helpful and those that were not helpful

Among other strategies used, the strategies that have been found to be more helpful to Proveg are quality assurance, quality control checks. Competitive pricing was only useful during the early years of the business since by then prices from local farmers were still low. However, because of continually increasing vegetable prices, suppliers are forced to sell at higher

prices. As such, lower competing pricing has not been helpful to them as doing so could lead to a loss of profits.

6.3.7 Challenges faced during penetration stages

Proveg stated that during the penetration stages or early years of business, they did not face any marketing challenges. This was due to the fact that there were clear and fewer rules and regulations that governed the marketing of vegetables. Futher, there were more farmers who supplied vegetables than there are today. Furthermore, there was no competition. However, currently the business is faced by so many challenges which are as a result of fewer farmers farming vegetables which inturn results in limited supplies and higher prices. There are also fluctuating prices, which has forced Proveg to change prices at regular intervals. This affects customers's trust in the seller since there is no more price guarantee. Customers can not budget in advance since prices can change at any time. This has negatively affected the business and has resulted in losses being incurred.

6.3.8 How the business has managed to survive in the face of challenges

Inspite of the above highlighted challenges that Proveg has faced, the business has managed to survive by increasing prices, maintaining quality, so that high prices charged equate to high quality, and conform to supply regulations. In addition to that, it was indicated that they are plans that have been put in place to employ new strategies that could boost the business.

6.3.9 General comments

Considering that there is much wastage associated with fresh produce, suggestions proposed to the effect that drying the vegetables provides a very big business potential to emerging processors. Thus, small processors can along with fresh vegetables also market dry vegetables and focus more on the consumer markets. Further, vegetable processors are advised to be consistent in doing business. For example, they should not be seasonal suppliers, but should be determined to satisfy the daily needs of their customers. Furthermore, attention should be put on quality assurance and packaging of their produce. It should be noted that packaging plays a very important role especially for processed vegetables. For instance, the colour of the package should be attractive to consumers.

6.4 Summary of market penetration strategies that can be used by small agro-processors

Among other marketing strategies that can be used by small agro-processors in marketing their produce, there are marketing strategies that are most suitable for sellers that are seeking entrance into a particular product market. These include competitive pricing, advertising and networking. Competitive pricing can either be low or high. A higher price is ideal when the consumers have an incentive to pay that high price for example, when the produce is of high quality. But when such incentives are absent, a lower price is often preferable. Due to that, lower prices usually attract more customers.

Advertising is yet another market penetration strategy that can be used by small agro-processors to gain entry into a product market. It is about informing potential customers of the existence of certain products that a seller is offering. There are various ways of advertising and from the case studies that were conducted advertising in local media such as magazines, distribution of flyers to potential customers, mounting of outlet flags are some of the ways that agro-processors can use to c[illegible]e to consumers about their existence.

Networking is yet another market penetration strategy that can be utilised by small agro-processors. Networking allows business people to meet, get to know each other, discuss their businesses and offers many opportunities to grow business.

6.5 Concluding remarks

From the three case studies that have been discussed in this chapter, it can be concluded that there are various marketing strategies that can be employed by vegetables processors to market their produce. These include good customer service, competitive pricing (for instance lower prices catering all customer groups including lowest income groups), offering a wide variety of vegetables, quality guarantee (quality assurance), redress refunds in the event that customers are not satisfied, and constant supplies.

However, it should also be noted that for any emerging seller who is attempting to gain entry into the product market, it is important that the seller first informs the potential customers about the products offered. This is very important because there is no way customers can buy produce without having knowledge about their existence. There are various ways of doing this and these include advertising in magazines, distributing flyers which shows products

offered and their prices to passersby, advertising by use of flags mounted next to the location of the outlet and networking.

CHAPTER 7: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

7.1 Discussions

Market access by small scale agro-processors is very important to ensure their economic viability. Access to markets can be limited by certain barriers such as absence of knowledge about consumer perceptions and factors that influence consumer decisions and their willingness to buy certain vegetables. It is therefore important for the processors to know consumer interests so as to produce products that meet customers' requirements and so as to know which products are worth producing. As such, it is always good for small scale processors to do a market research prior to production to avoid wastages that come by producing products that are not wanted in the market or production of products in excess of what is demanded in the market. Thus, through market research a marketer can be able to estimate the size of their markets, know what consumers want, know what product attributes they need to address and those attributes that are strong and promising and know more information on the market.

This study sought to assess the potential market of some selected vegetables and different ways of marketing the produce. It employed various research techniques in attempting to answer the research questions. The first part of the study sought to evaluate customers' perceptions concerning different processed vegetables. This part involved a vegetables tasting procedure in which 50 respondents were given samples of prepared dry vegetables to taste and evaluate these vegetables with respect to various attributes which included quality, taste, colour, texture and packaging.

The tasting procedure was done in order to find out whether or not consumers may like dried vegetables so as to assess if there is any potential market for those vegetables. In fact, from the results of the study, it was shown that customers liked dried vegetables; the problem they had was lack of knowledge of where they could get the vegetables and lack of experience with dry vegetables. Lack of knowhow of how to dry vegetables, therefore, means that small scale processors can take advantage of that and process the vegetables to sell to willing buyers. But there is also a challenge that the processors should overcome which relates to ensuring that they inform potential customers of where to buy these vegetables or perhaps finding suitable outlets of selling the vegetables. In other words, small scale processors should consider advertising to improve popularity of their produce.

The results from the tasting procedure also revealed that there are many attributes that may contribute to consumer decisions of buying dry vegetables. For instance, if the consumers like the taste of the vegetables, they are likely to buy them. Since in the study, the taste of the vegetables scored so high on average for all the vegetables, this indicated a potential market for the dry vegetables. Other attributes that were included in the study were texture, colour, packaging, and appearance. For all these attributes, the scores showed that respondents liked the vegetables so much hence this gives no doubt that there is indeed a potential market for the vegetables.

In addition to the four vegetables that were included in the study that is spinach, carrots, cabbage and mixed vegetables, some respondents indicated interest in other vegetables. These included dry beetroots, pumpkins, tomatoes, onion and butternuts. Therefore, this gave more opportunities to the processors to expand their scales of operation and incorporate these vegetables into the processing thereby ensuring economies of scale. It also indicates that there is a great market opportunity for these vegetables.

In addition to this vegetable tasting procedure, a village survey was done in four villages around Alice town and it included 200 respondents, 10 schools within a 20 km radius of Alice town, 10 supermarkets from Alice, King Williams and East London towns. The aim of the survey was to find out if the processed vegetables had a potential in these markets and to determine factors that influence willingness to buy. Apart from schools which had no definite responses as to whether or not they could buy processed vegetables from the AgriParks, some interest for the vegetables was shown in supermarkets and the individual markets. For instance, from the supermarkets, 40% (as shown in Figure 5.3.3) of them were interested in buying the processed vegetables from the AgriParks. From the individuals, 75% of the respondents indicated that they were interested in buying the processed vegetables. Considering that the AgriParks is a small scale producer, this outcome is actually not bad since it can be more manageable.

In order to determine the factors that influence individual consumers to buy processed vegetables, a binary logistic regression model was used and the results from the model showed that six factors were significant in influencing consumers' willingness to buy processed vegetables. These included own vegetable production in their homes, home preservation of vegetables, the personality of the individual, the environment in which the individual grew in or leaves in, the quality of the products and the attitudes of the consumer towards the processed vegetables. Other variables such as level of education and price of products were found insignificant even though they were expected to be significant.

Having known about the perceptions of consumers, the factors they consider when buying processed vegetables, the product attributes that may influence them to buy processed vegetables and significant factors that influence their willingness to buy processed vegetables, it was then found necessary to inform small processors on various ways of marketing their produce. This was done through conducting case studies on three existing vegetable processors with the aim of getting information on marketing strategies they are using in marketing their produce. The case study included other questions on challenges that were faced by the processors during their penetration stages into the markets they are serving and how they managed to survive in the face of those challenges. The results of the study showed that these processors use various ways of marketing and do not necessarily stick to one way of marketing. This helps in finding those strategies that are most useful and avoiding reliance on those that are not. Further, it ensures that processor are not limited by the use of the same strategy repeatedly. For example, a competitive price (low price) can be seen to be a way of attracting customers and of course it does attract some but to other customers it can be signal of low quality. Hence a differentiated pricing strategy can be more suitable in order to cater for all customers.

The processors also indicated that when it comes to product ranges, it is often good to have a wide range of products as this will attract more customers. Customers often like to buy their products in one place and they would not want a situation whereby they only buy one type of vegetable in one place and another in another place as this could be costly and time consuming. In short, the results of the case studies revealed that there are various marketing strategies that can be used in order to market one's produce, but, successful strategies may differ from one seller to the other. For emerging sellers it was shown that it is good for one to use marketing strategies that enable her to gain popularity such as advertising by means of flyers, flags and the use of competitive prices to attract customers.

7.2 Conclusions

The results of the vegetable tasting procedure revealed that, consumers had positive perceptions towards different vegetables. Further, there were various attributes that influenced consumer preferences for different vegetables and these included attributes such as quality, freshness, taste, texture and colour. Moreover, apart from product attributes, there are other non-product attributes that influenced the choice of vegetables by consumers and these included quality, price, packaging, uniqueness and the origin of the vegetables. Furthermore, socio-economic attributes such as the economic situation of the consumer and

level of education could also have considerable impact on consumer preferences of different vegetables.

It is also concluded that there are various factors that influence the willingness of consumers to purchase processed vegetables such as own production, preservation of vegetables at home, personality of the consumer, the environment in which the consumer lives or grew up in, the quality of the vegetables and the attitude of the consumers towards processed vegetables.

It is also concluded that there is a great potential market for processed vegetables. Individual consumers indicated that they were interested in the processed vegetables. This shows that if these products could be made available in supermarkets or in other markets, consumers could consider buying them. For example, some of the individual respondents suggested that the vegetables should be readily available in shops so that they will be able to buy. In addition to that, supermarkets also indicated interest in the vegetables. It therefore is the duty of the producer to find out about the preferences of his or her target customers so as to produce vegetables that meet their demands and also to select marketing strategies that suit each market segment from those available to them such as differentiated prices, advertising and quality assurance.

7.3 Recommendations

If vegetable processing activities by small-scale processors are to make a substantial income to household incomes, there is a need to improve on advertising, packaging, labelling and food safety requirements. The processors must respect consumer needs and strive to produce products which meet customers' requirements in terms quality, taste, colour and many other attributes. Small scale processors should also consider targeting particular consumers, for example, those from dry areas who rarely have access to fresh vegetables and places that are affected by seasonality in the case of dried vegetables. Dry vegetables present an opportunity for small scale processors to take lead in the market as these do not require complicated equipment to produce. Hence it is ideal to facilitate the effective production and marketing of processed vegetable products by small scale producers. This could be through helping them with marketing information, education, policy formulation which incorporates them, encouraging collective action to reduce transaction costs and many others. In this way small scale processors will be encouraged to remain in business and their ability to access markets will be enhanced. All this is only possible through conducting market research which will

give them understanding on the needs of their intended markets and enable them to choose suitable marketing strategies for each of the markets.

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APPENDIX

APPENDIX A

SECTION A: DEMOGRAPHIC INFORMATION

1. Gender

Male ☐ Female ☐

2. Age

20 and below ☐ 21 - 40 ☐ 41-60 ☐ Above 60 ☐

3. Marital status

Married ☐ Single ☐ Widowed ☐ Other ☐

4. Highest level of education

Primary level ☐ Secondary level ☐ Tertiary level ☐ None ☐

5. Are you employed? Yes ☐ No ☐

SECTION B

1. Do you eat (have you ate them before) dried vegetables? Yes ☐ No ☐

2. Which ones do you eat (have you ate)?----------

3. If yes, where do you usually get them from?----------

4. Would you like to taste dry vegetables? Yes ☐ No ☐

5. How often do you eat vegetables? Frequently ☐ Sometimes ☐ Rarely ☐

6. If you answered sometimes or rarely to question (5) above, what makes you not to eat them frequently?

They are not always available	Income constraints	You don't like them	Other (*specify*)

7. If the answer is not available, would you consider eating dried vegetables in place of fresh vegetables?----------

8. Have you considered drying your own vegetables? ----------

---

9. Are you aware of the benefits that come through the consumption of vegetables?

Yes ☐ No ☐

10. If you answered yes to question (9) above, what are the benefits? *(explain)*----------

---

(If you eat or if you answered yes to question 4above) continue if not return the questionnaire

5. Which ones of the dried vegetables would you (do you) like?

	Yes	No
Carrots	Yes	No
Onions	Yes	No
Cabbage	Yes	No
Spinach	Yes	No

7. When purchasing, what do you consider the most important? Indicate which attributes you consider to be most important by ticking it. (1 = attribute not important; 5= attribute very important)

	Not important			Very important	
Quality	1	2	3	4	5
Taste	1	2	3	4	5
Freshness	1	2	3	4	5
Price	1	2	3	4	5
Nutritious and healthy	1	2	3	4	5
Uniqueness	1	2	3	4	5
Ease of preparation	1	2	3	4	5
Vegetable locally grown	1	2	3	4	5

Other (*specify*)----------

After tasting

8. How do you rate the dried vegetables in terms of the following attributes? Please tick the appropriate number; 1 being poor, 5 being excellent.

SPINACH		CABBAGE	
ATTRIBUTES	RATINGS	ATTRIBUTES	RATINGS
Taste/ flavour	1 2 3 4 5	Taste/ flavour	1 2 3 4 5
Texture	1 2 3 4 5	Texture	1 2 3 4 5
Colour	1 2 3 4 5	Colour	1 2 3 4 5
Packaging	1 2 3 4 5	Packaging	1 2 3 4 5
Appearance	1 2 3 4 5	Appearance	1 2 3 4 5
Overall acceptability	1 2 3 4 5	Overall acceptability	1 2 3 4 5

APPENDIX B

SECTION A: DEMOGRAPHIC INFORMATION

A1. Name or number of respondent (*optional*)----------

A2. Location ----------

A3. Gender

Male ☐ Female ☐

A4. Age

20 and below ☐ 21- 40 ☐ 41-60 ☐ 61 and above ☐

A5. Marital status

Married ☐ Single ☐ Widowed ☐ Other ☐

A6. What is your household size?

5 and below ☐ 6 to 10 members ☐ 11 and above ☐

A7. Highest level of education

None ☐ Primary level ☐ Secondary level ☐ Tertiary level ☐

SECTION B: SOCIAL FACTORS

B1.What is your role in the household? ----------

B3i) Do you produce your own vegetables at home? Yes ☐ No ☐

B3ii) If yes, which vegetable types do you produce? (*Please mark with an x*)

Name of the vegetable	Mark with an x
Cabbage	
Carrots	
Beetroot	
Butternut	
Spinach	
Potatoes	

Others list them ----------

B4) How do you keep the following perishable vegetables in your home and for how long?

Perishable produce	How it is kept in the home	For how long
Cabbage		
Spinach		
Beetroot		
Carrots		
Tomatoes		
Butternut		
Others-----		

B5)i) Do you have access to fresh vegetables for your family throughout the year?

☐ ☐

Yes No

B5)ii) If the answer to question B5(i) is no, what times of the year are difficult for you to get fresh vegetables?----------
---

B7) i) Have you or anyone in your home done any preservation of vegetables?

Yes ☐ No ☐

B7)ii) If yes, what vegetable types have you or did they preserve? ----------
---

B7)iii) How do you preserve the vegetables? Please explain the process----------
---

B8 i) Do you think you can be interested in buying processed vegetables (e.g dried vegetables?

Yes ☐ No ☐

B9 i) From your own point of view, do you consider personality as a factor which influences the choice of vegetables you buy (whether processed or not)? Yes ☐ No ☐

B9ii) If yes, explain why that is the case? ----------

B10). Does the environment you live in influence the choice of vegetables you buy?

Yes ☐ No ☐

SECTION C: ECONOMIC FACTORS

C1) Are you formally employed? Yes ☐ No ☐

C1ii) Is there any member of the family who is formerly employed?

Yes ☐ No ☐

C2. What is the average level of income you earn per month?

500 and below ☐ between 501 and 3500 ☐ above 3500 ☐

C3. What is your main source of income?

Social grant ☐ Pension fund ☐ Informal trading ☐ Others ☐

SECTION D: GENERAL INFORMATION ABOUT VEGETABLES

D1. What influences your choice of vegetables when buying? is it the;

Appearance ☐ Price ☐ Freshness ☐ Other(*specify*) ☐

D2. Does the quality of vegetables affect where you buy most of your vegetables?

Yes ☐ No ☐

D3i) Do you care where the vegetables you buy was grown (i.e. locally grown or not)

Yes ☐ No ☐

D4ii) If yes which ones do you prefer most?

Locally grown ☐ Not locally grown ☐

SECTION E: INFORMATION ABOUT AGRIPARKS PRODUCTS

E1. Are you aware of the AgriParks products? Yes ☐ No ☐

E2. What can you say about the produce of the AgriParks?(mark with an x)

i) In terms of quality

Good ☐ Average ☐ Bad ☐

ii) In terms of variety

Good ☐ Average ☐ Bad ☐

iii) In terms of prices

High ☐ Average ☐ Low ☐

E2 How can you rate the packaging done by AgriParks?

Bad ☐ Average ☐ Good ☐ Very good ☐ Excellent ☐

E4 In your own opinion, what do you think can be done to improve this packaging such that it will be more attractive to you as a customer? ----------

---

E5.What can you say about your attitude towards processed vegetables)

Negative ☐ neutral ☐ positive ☐

General comments----------

Thank you for participating

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APPENDIX C

NAME OF SUPERMARKET----------

1. Do you buy vegetables for resale? Yes ☐ No ☐

2. If yes where do you buy them from? ----------

---

3. Which vegetable types do you usually buy? ----------

---

4. Are you satisfied with the current supplies of vegetables or you sometimes face shortages?

---

5. Which vegetables is always in short supply? ----------

---

6. Are the vegetables you buy processed or not (or both) (*specify*) ----------

---

7. What quantities do you usually buy? ----------

8. What prices are you paying for the processed vegetables?

Carrots (per packet)	
Cabbage (per packet)	
Spinach (per packet)	
Mixed vegetables(carrots, spinach and cabbage) (per packet)	
Butternut (per packet)	
Others	

9. Do you usually need transport for delivering purchased vegetables or you provide your own transport? ----------

---

10. Do you have knowledge about the existence of processed vegetables produced by Agriparks? Yes ☐ No ☐

11. If yes, how did you become aware of them? ----------

---

12. If not, now that you are aware, would you consider buying from them?

Yes ☐ No ☐

13. If not, please explain why?----------

14. If you were to enter into a contract with the AgriParks, which one would you prefer?

Weekly/ monthly/ seasonally/ other (specify) ----------

15. a) Which vegetable types would you prefer from those supplied by the Agriparks? Please indicate your preference by ticking the appropriate number. (From 1 being less preferred and 5 being the most preferred).

Vegetable	Vegetable prices					
Fresh carrots	500g@ R7	1	2	3	4	5
Fresh spinach	500g@ R6	1	2	3	4	5
Fresh cabbage	500g@ R5	1	2	3	4	5
Mixed (cabbage, carrots and green paper)	500g@ R6	1	2	3	4	5
Fresh butternut	500g@ R6					
Dried spinach	100g@ R6	1	2	3	4	5
Dried carrots	100g@ R8	1	2	3	4	5
Dried cabbage	100g@ R4.50	1	2	3	4	5
Dried onions	100g@ R7	1	2	3	4	5
Pure vegetable soups	180g@ R10 ; 60g@ R6	1	2	3	4	5

b) Please mention other vegetables you would want not included above----------

---

16. (a) Do you think the prices charged by Agriparks are fair?

Yes ☐ No ☐

(b). If not what do you think should be done?(*explain briefly for example if you think the prices are too high what must they do so that their product equates the prices charged)* -------

---

---

17. When purchasing, what do you consider the most important? Indicate which attributes you consider to be most important by ticking it. (1 = attribute not important; 5= attribute very important)

	Not important				Very important
Quality	1	2	3	4	5
Freshness	1	2	3	4	5
Price	1	2	3	4	5
Appearance	1	2	3	4	5
Uniqueness	1	2	3	4	5
Colour	1	2	3	4	5
Vegetable locally grown	1	2	3	4	5

Other (*specify*)----------

18. How do you rate the products sold by the AgriParks in terms of the following attributes? Please tick the appropriate number; 1 being poor, 5 being excellent.

	Poor				Excellent
Quality	1	2	3	4	5
Texture	1	2	3	4	5
Freshness	1	2	3	4	5
Appearance	1	2	3	4	5
Packaging	1	2	3	4	5
Overall acceptance	1	2	3	4	5

General comments ----------

THANK YOU FOR PARTICIPATING

APPENDIX D

QUESTIONS RELATED TO SCHOOLS

1. Name of the school----------

2. Occupation of the respondent----------

3. Do you have a school feeding scheme? (*please mark with an x*) Yes ☐ No ☐

4. Which vegetable types do you buy for your school feeding scheme?----------
---

6. What is the school budget for the school feeding scheme?----------
---

7. Who decides on what to buy, from where and in what quantities?----------
---
---

8. Who pays for the school feeding scheme?----------
---

9. Who provides transport for carrying the vegetables you buy?----------
---

10. How frequent do you buy vegetables for your school feeding scheme? ----------
---

11. How much quantities of vegetables are you currently buying?----------
---

12. At what prices are you buying?----------
---

13. Do you think you can be interested to buy some from the Agriparks?

Yes ☐ No ☐

14. Where do you usually buy your vegetables?----------

---

15. Are you satisfied with the current supplies of vegetables or you sometimes face shortages?----------

16. If you would like to buy, what types of vegetables (do you) would you like to buy?--------

---

---

17. In what state do you like the vegetables? (processed or raw or both)----------

---

18. What quantities would you want to buy?----------

---

19. What do you think about the nutritional value of the Agriparks products relative to the products you currently buy?----------

20. (a). Do you think the prices charged by Agriparks are fair?

Yes ☐ No ☐

(b) If not what do you think should be done?(*explain briefly for example if you think the prices are too high what must they do so that their product equates the prices charged)*--------

---

---

21. If you were to enter into a contract with the AgriParks, which one would you prefer?

Weekly / monthly/seasonal/ other specify (*please tick the appropriate one*)

22. Which vegetable types would you prefer from those supplied by Agriparks? Please indicate your preference by ticking the appropriate number. (*1 being less preferred and 7 being the most preferred).*

	Less preferred				Most preferred
Fresh Carrots	1	2	3	4	5
Fresh spinach	1	2	3	4	5
Fresh cabbage	1	2	3	4	5
Mixed (cabbage, carrots and spinach)	1	2	3	4	5

Dried spinach	1	2	3	4	5
Dried carrots	1	2	3	4	5
Dried cabbage	1	2	3	4	5
Dried onions	1	2	3	4	5
Soups	1	2	3	4	5

The question below applies only to those schools who have bought vegetable products from the Agriparks

23. How do you then rate the products sold by the AgriParks in terms of the following attributes? (*Please tick the appropriate number; 1 being poor, 7 being excellent.)*

	Poor				Excellent
Quality	1	2	3	4	5
Texture	1	2	3	4	5
Appearance	1	2	3	4	5
Packaging	1	2	3	4	5
Overall acceptance	1	2	3	4	5

Other attributes (specify)----------

---

24. General comments----------

THANK YOU FOR PARTICIPATING

APPENDIX E

Questionnaire for processors

1. Name of the processor ----------
2. Give brief information about the organisation ----------

   ---

3. Give a brief description of products sold----------

   ---

4. Which markets do you save? ----------

---

5. For how long have been serving these markets? ----------

---

6. Can you tell us why you chose to deal in the above mentioned products? ----------

---

---

7. What strategies have you used to gain entry into the product markets you save? --------

---

---

8. Which ones of the strategies were successful (did you find helpful)? ----------

---

---

9. Which ones were not helpful and why ----------

---

10. Can you please tell us about challenges you faced during the penetration stages into the markets? ----------

---

---

11 In the face of the above challenges, how did you manage to survive? ----------

---

---

12 General comments ----------

THANK YOU FOR PARTICIPATING

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Ethics Research Confidentiality and Informed Consent Form

Please note:

This form is to be completed by the researcher(s) as well as by the interviewee before the commencement of the research. Copies of the signed form must be filed and kept on record

(To be adapted for individual circumstances/needs)

Our University of Fort Hare / Department is asking people from your community / sample / group to answer some questions, which we hope will benefit your community and possibly other communities in the future.

The University of Fort Hare / Department/ organization is conducting research regarding **alternative remedies used by resource-limited farmers to treat reproductive ailments and manipulate reproduction in goats.** We are interested in finding out more about **the alternative remedies used and document them.** We are carrying out this research to help **communal famers and even commercial farmers to improve the reproductive performance of their animals** (*adapt for individual projects*)

Please understand that you are not being forced to take part in this study and the choice whether to participate or not is yours alone. However, we would really appreciate it if you do share your thoughts with us. If you choose not take part in answering these questions, you will not be affected in any way. If you agree to participate, you may stop me at any time and tell me that you don't want to go on with the interview. If you do this there will also be no penalties and you will NOT be prejudiced in ANY way. Confidentiality will be observed professionally.

I will not be recording your name anywhere on the questionnaire and no one will be able to link you to the answers you give. Only the researchers will have access to the unlinked information. The information will remain confidential and there will be no "come-backs" from the answers you give.

The interview will last around (20) minutes *(this is to be tested through a pilot).* I will be asking you a questions and ask that you are as open and honest as possible in answering these questions. Some questions may be of a personal and/or sensitive nature. I will be asking some questions that you may not have thought about before, and which also involve thinking about the past or the future. We know that you cannot be absolutely certain about the answers to these questions but we ask that you try to think about these questions. When it comes to answering questions there are no right and wrong answers. When we ask questions about the future we are not interested in what you think the best thing would be to do, but what you think would actually happen.

If possible, our organisation would like to come back to this area once we have completed our study to inform you and your commu[illegible] the results are and discuss our findings and proposals around the research and what this means for people in this area.

INFORMED CONSENT

I hereby agree to participate in research regarding **alternative remedies used to treat reproductive ailments and manipulate reproduction in goats.** I understand that I am participating freely and without being forced in any way to do so. I also understand that I can stop this interview at any point should I not want to continue and that this decision will not in any way affect me negatively.

I understand that this is a research project whose purpose is not necessarily to benefit me personally.

I have received the telephone number of a person to contact should I need to speak about any issues which may arise in this interview.

I understand that this consent form will not be linked to the questionnaire, and that my answers will remain confidential.

I understand that if at all possible, feedback will be given to my community on the results of the completed research.

.....

Signature of interviewer **Date:**.....

.....

Signature of participant **Date:**.....

University of Fort Hare
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ETHICAL CLEARANCE CERTIFICATE
REC-270710-028-RA Level 01

Certificate Reference Number: MUS091SMUG01

Project title: **An assessment of the potential markets for selected value- added agricultural products: A case of University of Fort Hare – led Ilima Agriparks programme, Alice**

Nature of Project:

Principal Researcher: Unity Musende

Supervisor: Prof A Mushunje

Co-supervisor:

On behalf of the University of Fort Hare's Research Ethics Committee (UREC) I hereby give ethical approval in respect of the undertakings contained in the above-mentioned project and research instrument(s). Should any other instruments be used, these require separate authorization. The Researcher may therefore commence with the research as from the date of this certificate, using the reference number indicated above.

Please note that the UREC must be informed immediately of

- Any material change in the conditions or undertakings mentioned in the document
- Any material breaches of ethical undertakings or events that impact upon the ethical conduct of the research

The Principal Researcher must report to the UREC in the prescribed format, where applicable, annually, and at the end of the project, in respect of ethical compliance.

Special conditions: Research that includes children as per the official regulations of the act must take the following into account:

Note: The UREC is aware of the provisions of s71 of the National Health Act 61 of 2003 and that matters pertaining to obtaining the Minister's consent are under discussion and remain unresolved. Nonetheless, as was decided at a meeting between the National Health Research Ethics Committee and stakeholders on 6 June 2013, university ethics committees may continue to grant ethical clearance for research involving children without the Minister's consent, provided that the prescripts of the previous rules have been met. This certificate is granted in terms of this agreement.

The UREC retains the right to

- Withdraw or amend this Ethical Clearance Certificate if
  - Any unethical principal or practices are revealed or suspected
  - Relevant information has been withheld or misrepresented
  - Regulatory changes of whatsoever nature so require
  - The conditions contained in the Certificate have not been adhered to
- Request access to any information or data at any time during the course or after completion of the project.
- In addition to the need to comply with the highest level of ethical conduct principle investigators must report back annually as an evaluation and monitoring mechanism on the progress being made by the research. Such a report must be sent to the Dean of Research's office

The Ethics Committee wished you well in your research.

Yours sincerely

Professor Gideon de Wet
Dean of Research

28 May 2014