CONSUMER PERCEPTIONS AND VALUES ON BEEF QUALITY: IMPLICATIONS ON BEEF MARKETS

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DECLARATION

I, Sunungukai Mabhera, hereby declare that the work contained in this thesis is my own and that other scholars' works referred to here have been duly acknowledged. I also declare that this thesis is original and has not been submitted elsewhere for a degree.

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ABSTRACT

Beef constitutes an important part of many consumers' diets. Beef is the most consumed red meat in South Africa. Consumer perceptions can affect the whole supply or value chain of beef. Recently there has been increased interest in food safety; greater concern for environmental and animal welfare issues, increased importance of eating quality and healthy food as well as the greater role of food services. The demand for beef is no longer limited to economic factors alone but to non-economic factors as well. Consumers of beef in Alice have become more concerned about meat-borne risks and personal health. This research prioritized the exploration of the beef consumers' (i) self-perception (ii) price perception (iii) benefit perception [in the form of – (a) value perception and (b) quality perception].

The study was conducted in the Eastern Cape Province specifically in Alice town and the surrounding rural areas (Ntselamanzi, Gaga, Hillcrest, Gqumashe, and Dyamala) of the Nkonkobe municipality. Anyone who admitted to eating beef and at the point of data collection bought beef for their own consumption or family consumption was deemed as a unit of analysis. Non – probabilistic sampling techniques which included accidental and random sampling were used to collect data from 100 interviewees.

A semi structured questionnaire was used to analyse the perceptions and attitudes of beef consumers. The respondents were asked to indicate their agreement or disagreement with 47 statements or items presented on either five alternatives in a Likert scale scored from 1 (strongly disagree) to 5 (strongly agree) or a six Likert scale ranging from 1 (very low) through 5 (very high) to 6 (I do not know).The data was analysed using SPSS.

It was discovered that beef consumers did not consider either intrinsic or extrinsic cues in isolation when purchasing beef but rather all characteristics contribute to the final perception. The Alice consumer market is heterogeneous and consists of different races with different

cultures and market segments with varying needs and preferences. The results showed that five factors were extracted from forty seven items Factor 1: Information reliance and quality indication; Factor 2: convenience; Factor 3: Traceability and animal Welfare; Factor 4: Health and safety Conscious and Factor 5: Price and Branding.

Furthermore, four main consumer segments emerged as - Segment 1: Informed buyers; Segment 2: Elite buyers; Segment 3: Health & safety conscious buyers and Segment 4: Apathetic buyers. The cluster analysis shows that quality is a subjective concept that is informed by a consumer's personal taste and preferences. Taste and preferences inform the consumer's effective demand which in retrospect is informed by the consumer's socio-economic status.

Key words: Beef, consumer perceptions, marketing, factor analysis, market segments, means-end chain analysis

DEDICATION

I dedicate this work to my parents Mr JP and Mrs E Mabhera, my wife Mrs ND Mabhera, my sisters Ms S and F Mabhera and to my son Mr JP Mabhera.

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CHAPTER 1: INTRODUCTION

Background

Consumer perception is defined by Lantos (2011) as the process via which consumers select and organize stimuli, so as to provide themselves with a meaningful and coherent view of the world. In the Business Dictionary (2012) the phrase 'consumer perception' refers to a marketing concept that encompasses a customer's impression, awareness and/or consciousness about a company or its offerings. Perception is more than sensing something, it is assigning meaning and incorporating it into one's world (Lantos, 2011). Consumer perception is typically affected by advertising, reviews, public relations, social media, personal experiences and other channels (Parumasur and Roberts- Lombard, 2012).

According to Parumasur and Roberts- Lombard (2012) the interpretation and ignoring some of the messages whether based on intuition or past experiences leads to the formation of perceptions. As such when one perceives they make choices based on what they value.

Perception varies from person to person owing to our uniqueness as human beings. Mukherjee (2009) acknowledges that the problem with perception is that two people may be subjected to the same stimuli under apparently the same conditions, but how they recognize, select, organize and interpret them is a highly individual process based on each person's own needs, values expectations and the likes. The complexity of consumer perceptions towards meat can neither be under-estimated nor over-emphasized.

The Food Standards Australia New Zealand (FSANZ) Food Standard Code (2002) defines meat as 'the whole or part of the carcass of any buffalo, camel, cattle, deer, goat, hare, pig, poultry, rabbit or sheep, slaughtered other than in a wild state, but does not include eggs, or

fetuses.' There is no general definition for meat in South Africa, so throughout this study the FSANZ (2002) definition will be used.

Meat in general and beef in particular is a varied product (Agriculture and Horticulture Development Board Industry Consulting, 2008). Strydom (2011) notes that the production, distribution, processing and retailing of meat in South Africa are affected by several challenges, notably fragmented production and retailing, frequent mis-alignment of supply and demand, a long history of government intervention in the market and a high level of imports. The marketing of livestock and meat is conducted through several different competing and lengthy channels, each with its own set of deficiencies and inadequate feedback of consumer requirements to the primary producer (Strydom, 2011).

The Department of Agriculture (2008) asserts that the meat available in South African butcheries, supermarkets and retail shops is of good quality and safe. It claims that on a worldwide scale the South African meat industry is probably the best regulated industry, with the specific aim to protect the consumer.

Consumers are increasingly becoming aware of issues such as feed additives, residue levels, and the use of agro-chemicals as well as animal welfare matters linked to the various production and processing systems in the country (South African Meat Industry Company, 2013). This involves asking questions about food on the plate, how and where it was produced and where it was processed. It is, therefore, becoming very important to positively trace the origin of the animal or animal product (South African Meat Industry Company, 2013).

According to Williamson *et al* (2005) beef constitutes an important part of many consumers' diets, although its consumption has become quite a controversial issue. Red meat provides essential nutrients, containing high quality protein and essential micronutrients such as vitamins A, B6, B12, D and E, iron, zinc and selenium, contributing to consumers' health

throughout life (Scollan *et al* 2006). Duffy (1999) and Huston (2000) state that there has been no shortage of analysis of the factors influencing demand for meat in general by consumers. Duffy (1999) is of the opinion that the simple relationship of price and consumption no longer applies. Huston (2000) goes further and calls into question the ability of price movements alone to explain problems relating to the demand for meat.

Duffy (1999) identified two broad classifications for factors that influence the demand for meat, namely economic and non-economic factors. Economic factors, on the one hand, include income and price. In other words, consumers will generally increase their consumption of meat when real income increases, whilst consumption will decline when price relative to other meats rises. Non-economic factors, on the other hand, include issues pertaining to health and safety, convenience, quality, animal welfare and the environment.

Huston (2000) argues that there are several forces at work in the market place that undermine "red" meat demand, namely (i) perceptions that meat is old-fashioned and boring with questionable safety, (ii) perceptions among consumers that meat is too difficult and time-consuming to prepare, (iii) questions surrounding meat's healthfulness (specifically concerns about fat and cholesterol) and (iv) prices too high for some consumers to justify its purchase (leading them to select a product that they perceive has better value). Evidently consumer behavior towards food is characterized by changing preferences and values. The implications of such changes affect not only the demand but the supply of the product in question. To provide better service to the consumer the producer has to have insight of the expectations of his buyers. This is an exploratory research that seeks to capture beef consumers' perceptions towards the markets they are in.

Problem Statement

Consumer perceptions influence the marketing of beef and its products. Production can be seen to focus on cost reduction and profit maximization. Strydom (2011) highlights several problems with the current beef markets in South Africa: these problems include, poor market transparency, made even more difficult by a fragmented industry, poor market intelligence with regard to guidelines for price formation, the lack of a common descriptive language for a highly variable product, a production driven industry, as opposed to a market or consumer driven industry; and a lack of consumer confidence in the retail product caused by, among other things, lack of precise description at retail level, poor labelling and marking. This implies that beef producers are more concerned about how much the beast or carcass will weigh and how much they will get for it. Distributors on the other hand, may be worried about their turnover as well as profits. One question is: "Are any of the producers or marketers stopping to ask themselves what the consumer thinks or feels about the beef that they have to offer? "

The fundamental question that the suppliers and distributors need to ask themselves is; how does the consumer perceive the beef product on the market? Based on the arguments presented by Strydom (2011) the market or the whole supply chain as it were is no longer consumer based. This becomes a problem because, "consumption is the sole end of all production" as the economist Adam Smith (1776) coined. If the producers, distributors and the marketers do not seek to understand the consumers' perceptions, the whole supply chain and the effective demand for the product might be compromised.

There is a paradigm shift in the manner in which consumption is taking place (Labuschagne *et al* 2010). This is revealed in a number of ways, such as, increased interest in food safety, greater concern for environmental and animal welfare issues, increased importance of eating quality and the greater role of food services (Di Pasquale *et al* 2011, Labuschagne *et al* 2010). The

demand for beef is no longer limited to economic factors alone but to non-economic factors as well. Consumers in most developed and developing countries have become more concerned about meat-borne risks and personal health, climate change (Labuschagne *et al* 2010). Consequently, safety and nutrition have become significant determinants in the demand for beef. Changes in consumer taste and preference have also occurred such as the increased consumption of processed meat products (Grunert 2006). Furthermore, consumers have been increasingly expressing ethical concerns such as meat adulteration and environmental concerns related to meat consumption, since beef production is particularly resource intensive and inefficient, putting pressure on the natural environment, climate, energy, water and biodiversity (South African Meat Industry Company, 2013). For this reason the aim of this study is to reveal the preferences of the consumers of interest, and to understand *why* these consumers choose as they do in regards to beef.

1.1 Research Objectives

The main objective of this research is to understand how beef consumers make choices and how their consumption intentions with respect to beef are derived and determine the possible implications thereof on the marketing channels (formal and informal) in both the rural and urban areas.

As such the specific objectives are as follows:

- ✓ To investigate attitudes and beliefs, preference and socio-economic influences affecting beef consumption
- ✓ To assess the importance of socio-demographic characteristics in shaping beef consumption decisions
- ✓ To assess the relationship between consumption patterns and the market segment a consumer belongs to.

1.2 Research Questions

The focus of this study is to explore the following problem statement:

"What are the consumer perceptions of beef on the market and what are the implications thereof on the supply chain?"

To address the above mentioned problem statement, this study seeks to explore the following research questions:

1. Do consumers choose beef based on where, who and how it was produced?
2. What are the most important purchase determinants to beef consumers?
3. What do consumers mean by quality and value and how are perceptions on quality and value formed?
4. How do consumers relate self-perception, price perception and benefit perception in their deliberations about beef?

1.3 Research Justification

As the old adage goes, "The customer is King…" there is need to understand consumer perceptions and values especially in an area where very little is documented about the subject. The purpose of this study is to explore what beef markets and products mean to the proverbial 'King' (the consumer). With a diversified array of consumer groups, there is a need to collate various random consumer perceptions and attitudes from different strata into meaningful information to producers and marketers. Adam Smith (1776) coined, that "*consumption is the sole end and purpose of all production".* In the light of the great economist's words, this research priorities the exploration of the beef consumers' (i) self-perception (ii) price perception (iii) benefit perception [in the form of – (a) value perception and (b) quality perception].

1.4 Thesis Outline

The project will be outlined as follows:

Chapter 2 consists of a literature study on the formation of the perceptual process. It also discusses on the marketing implication of perception. The chapter discusses some relevant models on consumer perceptions on beef. The chapter has a detailed scrutiny on what other authors have said about red meat marketing in South Africa and consumer perceptions on the quality of beef. It focuses on the impact of factors affecting the purchase of beef and consumption thereof, factors affecting food decisions made by individual consumers.

Chapter 3 commences by the study area selection criteria and its description. Then it outlines the research design and specifies the units of analysis. The sampling techniques and sample sizes are also discussed. Finally the conceptual framework with specifications to this dissertation is then presented.

Chapter 4 will present descriptive results as well as offer an empirical presentation of results which includes; beef consumers' behaviour and preferences, the nature of Alice Town beef market and market segmentation.

Chapter 5 will entail conclusions, recommendations and further research directions.

CHAPTER 2: LITERATURE REVIEW

2.1 Overview

This chapter presents the nature of perception and the perceptual process, exploring how customers deal with incoming stimuli in connection with beef. It discusses how external factors impact on consumer consciousness and awareness to the point where they become sure about what kind of product they want to purchase. Basically the chapter gives an overview of the consumer perception theory. The nature of perception, stages of perception in marketing, perception and marketing, the concepts of perceived value, perceived price, and perceived quality are explained. Having outlined the consumer perception theory; the later parts of this chapter focus on giving a picture of the South African beef consumer versus beef consumers in the world.

2.2 The nature of perception

Every day consumers are confronted with numerous advertisements and sensory experiences. These come in the form of radio and television commercials, newspaper advertisements, billboards, product packaging, online advertisement and the conversations we have with strangers as well as familiar people (Parumasur and Roberts - Lombard, 2012). Consumers deal with this bombardment by paying attention to some messages and ignoring others. People interpret these different messages according to what they have learnt through past experiences or simply based on intuition. When consumers assign their own meanings to different circumstances they form perceptions. Marketers are particularly interested in how customers perceive external information, how they select and attend to various sources of information and how they interpret and give meaning to this information (Parumasur and Roberts - Lombard, 2012).

According to Parumasur and Roberts - Lombard (2012) perception is the process by which people select, organise and interpret stimuli to form a meaningful picture of the world through the senses of sight, smell, sound, touch and taste. Kotler and Keller (2006) concur that

perception is the process by which an individual selects, organises and interprets information inputs to create a meaningful picture of the world. Kotler and Keller (2006) further explain that perception depends not only on the physical stimuli but also the stimuli relating to the surrounding field and conditions within the individual. Therefore, perception can vary among individuals exposed to the same reality.

Parumasur and Roberts - Lombard (2012) explain that people like computers undergo stages of information processing in which stimuli are interpreted and stored. However, unlike computers we do not passively process whatever information that happens to be present. Consumer perception applies the concept of sensory perception to marketing and advertising. Just as sensory perception relates to how humans perceive and process sensory stimuli through their five senses, consumer perception pertains to how individuals form opinions about companies and the merchandise they offer through the purchases they make. Merchants apply consumer perception theory to determine how their customers perceive them or how their products should be. They also use consumer perception theory to develop marketing and advertising strategies intended to retain current customers and attract new ones.

Parumasur and Roberts - Lombard (2012) argue that perception is selective, subjective and based on the individual's frame of reference and present the following points thereon.

- Perception is selective

  Although we are exposed to a deluge of information, we attend to only a relatively small percentage, which we pass on to the central processing part of our brains for interpretation. This selectivity is called perceptual defence, and it means that as individuals, customers are not passive recipients of marketing messages. Rather customers largely determine the messages they will notice as well as the meaning they

will assign to the messages. Clearly marketers face a challenging task when communicating with customers.

- Perception is subjective

  Subjective factors always play a role in perception. In other words people may see or hear what they are interested in because of who they are, what they believe in, their value systems etc.

- Perception is based on the individual's frame of reference

  The individual's act of perceiving is based on his or her experience (Joubert, 2010). This experience has built up a relatively stable cognitive organisation in the individual which determines the meaning of a particular perception. Individuals add or take away from these sensations as they assign meaning to them based on their experience.

  The perceptual process influences marketers' ability to reach customers in a crowded marketplace. Consumers differ in terms of their ability to 'pick up' marketing messages via sensation. Once a message has been received its effectiveness hinges on the customer's interest in paying attention to it. Customers are often in a state of sensory overload, exposed to far more marketing stimuli than they are capable of processing. To further complicate matters, for marketers, when people do pay attention to marketing information, the meaning they attach to it may be quite different from what the marketer intended (Joubert, 2010).

2.3 The perceptual process

Perception establishes the meaning about a product or brand when a consumer makes initial contact. In marketing, this is described as consumer information processing. At this stage, all

of the senses are engaged in receiving brand marketing communicate messages. In the marketing literature (Parumasur and Roberts- Lombard, 2012; Hawkings *et al*, 2001; Kotler and Keller, 2006) four distinct stages of perception occur during consumer information processing: sensation or exposure, attention, interpretation and retention also called memory or recall. Hawkings *et al* (2001) define information processing as a series of activities by which stimuli are perceived, transformed into information and stored. Information processing commences when the consumer is exposed to an external search. This is explained by the diagram below (fig 2.1).

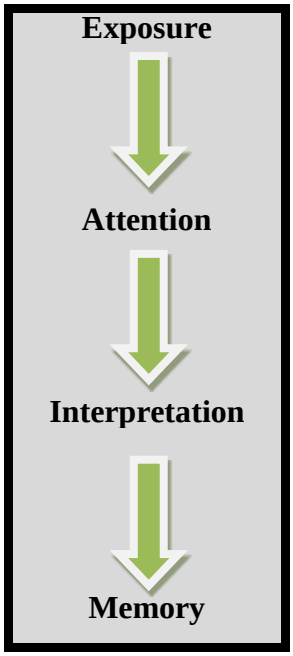

Figure 2.1: Stages in information processing. Adapted from Lantos (2011)

The diagram above illustrates an information processing model showing four major steps. The perceptual process consists of these four stages - exposure, attention, interpretation and memory that are discussed in the following section.

2.3.1 Exposure or Sensation

Parumasur and Roberts- Lombard (2012) define exposure as the degree to which a person notices a stimulus that is within a range of his receptors. They explain that the individual need not receive the stimulus for exposure to have occurred. According to Hawkings *et al.* (2001), exposure occurs when a stimulus comes within a range of one's sensory receptor nerves. For an individual to be exposed to a stimulus, the stimulus only has to be placed within the person's relevant environment. Once exposed to information, consumers need to allocate information processing capacity to the incoming information, or alternatively decide not to allocate processing capacity.

Sensation or perception thus describes what occurs when a person's senses are initially exposed to the external stimulus of a product or brand marketing. Exposure is the first step in information processing because communication needs to reach consumers first, resulting in activating one or more senses, therefore, exposure is the start of preliminary processing (Parumasur and Roberts- Lombard, 2012). The sensory receptors of a consumer are engaged by product or brand cues through sight, sound, smell, taste and texture. Cross (2012) uses an example of the coffee shop Starbucks to explain this concept. Starbucks engages all the senses in its sensory brand marketing. A customer who enters a Starbucks coffee shop may hear the sounds and smell the aroma of the grinding of fresh coffee in the store. Background music and a unique store design round out the experience of the taste of hot or cold coffee and food products that can be enjoyed in-store at quaint cafe tables.

Kotler and Keller (2006) state that the average consumer screens over 1 500 advertisements or brands per day. The consumer's screen information and the process are called selective attention. Most of the stimuli to which an individual is exposed are self-selected, as stated by Parumasur and Roberts- Lombard (2012). Parumasur and Roberts- Lombard (2012) explain that we mentally tune out messages we do not want to hear or see, and we deliberately ignore the messages we have no interest in. Customers, therefore, seek out some adverts, some shelf

displays, some salespeople and sources of information while avoiding others, depending on their needs and interests.

Because customers are being exposed to so many advertising stimuli, marketers are becoming increasingly creative to gain exposure for their products (Parumasur and Roberts- Lombard, 2012). Ries and Ries (2000) explain that consumers live in a brand over-communicated society. In defence against this overexposure, consumers increasingly erect selective awareness and attention measures. Enslin (2003) agrees that marketers are challenged to break through the expected commercial clutter barriers to ensure that their brand identity strategy impacts on consumers. Parumasur and Roberts- Lombard (2012) state that one of the solutions marketers can gain exposure for their products is to put adverts in unconventional places where there will be less competition, such as the backs of shopping trolleys, walls of sports stadiums and even in rest rooms where marketers have a 'captive audience'. The proper approach in media planning, therefore, would be to determine which media customers in the target market are most frequently exposed to, and then advertise in these media.

According to Parumasur and Roberts- Lombard (2012) exposure to a message means only that it has been seen or heard. There is no guarantee that the individual will pay attention to it

2.3.2 Attention

Parumasur and Roberts- Lombard (2012), postulate that, attention refers to the extent to which the processing activity is devoted to a particular stimulus. In consumer information processing, attention occurs when a person lingers and gives mental processing capacity to the external stimulus from a product or brand. Selective perception is when a consumer pays attention to

messages that are consistent with her attitudes, beliefs and needs. When a product is inconsistent with these factors, the consumer will withdraw attention.

With reference to Mostert (2002), attention will most likely occur if the incoming message and the contents thereof are considered relevant. Attention occurs when the stimulus activates one or more sensory receptor nerves, and the resulting sensations go to the brain for processing. At this stage of the process, consumers may ignore dominated messages, thereby exercising the capabilities of their selective attention. Due to the consumer's processing limitations, not all the stimuli that activate the consumer's sensory receptors will receive additional processing. The same individual may devote different levels of attention to the same stimulus in different situations. It can be concluded that due to limitations of the processing capacity, consumers selectively pay attention to messages.

With reference to Parumasur and Roberts- Lombard (2012) attention is determined by the individual, the stimulus and situation. Hawkings (2000) is also of the opinion that attention is determined by three factors, namely the individual, the stimulus and the situation:

i. *The individual*

According to Lee (2003), individuals pay more attention to information that is compatible with their own regulatory goal. Kotler and Keller (2006) maintain that personal characteristics also influence the buyer's decisions. These include the buyer's age and stage in the life cycle, occupation, economic circumstances, personality, self-concept, lifestyle and values. Individuals seek exposure and examine information relevant to their current needs.

Mostert (2002) argues that personal determinants or individual factors, refer to the characteristics of the individual that influence attention, including needs or motivation,

attitudes, adaptation level and attention span. Consumer needs have a strong influence on stimuli that will receive information. The consumer is, therefore, more motivated to attend to messages (stimuli) that meet needs that already exist

Customers are more likely to be aware of stimuli that relate to their current needs. Interest or needs seem to be the primary individual characteristics that influence attention (Hawkins *et al*, 2004). Interest is a reflection of the overall lifestyle as well as a result of the long term goals and plans, such as becoming a meat scientist or satisfying hunger.

Some findings by Kotler and Keller (2006) on the issue of attention are:

- People are more likely to notice stimuli that relate to a current need, for example, a pregnant lady noticing baby adverts and specials.
- People are more likely to notice stimuli that they anticipate, for example, a person attending a rock concert will most likely notice an announcement of the next performer through the noise.
- People are more likely to notice a stimulus whose deviations are large in relation to the normal size of the stimulus. For example, "buy one get one free promotions" capture the attention of potential buyers.

ii. *The stimulus*

Stimulus factors are the physical characteristics of the stimulus itself. A number of stimulus characteristics tend to attract one's attention independently of one's individual characteristics (Hawkins *et al*, 2004).

Parumasur and Roberts- Lombard (2012) state that the characteristics of the stimulus itself may also play an important role in determining what is noticed and what is ignored. Marketers need

to understand these factors so that they can apply them to their messages and packaging to boost their chances of cutting through the clutter of a multitude stimuli and commanding the customer's attention. Parumasur and Roberts- Lombard (2012) state that; stimuli that generally differ from others surrounding them are more likely to be noticed. They further on state that, this contrast can be created in several ways:

- *Size and intensity*: The larger the stimuli, the more likely they are to be noticed as compared to smaller stimuli (Mookerjee *et al*, 2010). A full page advertisement is likely to be noticed than one that is on quarter pages. Insertion frequency, that is, the number of times the same advert appears in the same issue of a magazine, has an impact similar to advertisement size. The intensity such as the loudness, the brightness and length of time one is exposed to the stimulus works in the same way and can increase attention. For example, the longer the message in an advertisement is displayed on TV, the more likely consumers will remember it (Mookerjee *et al*, 2010)
- *Colour*: According to Parumasur and Roberts- Lombard (2012) this is a powerful way of drawing attention to a product or giving it a distinct identity. For example, the yellow pages originally were coloured yellow to increase the attention of bored telephone operators (Parumasur and Roberts- Lombard, 2012). However, while the colour can increase attention and readership, if a colour is not used properly it can distract the message and the ability of the audience process the message effectively.
- *Position*: Stimuli that appear in one place are more likely to look and stand a better chance of being noticed. Objects placed near the center stand a better chance of being noticed than those near the edge of the field. This is a primary reason for consumer goods to compete fiercely for eye level space in supermarkets. Similarly

advertisements on the right hand page of the newspaper or magazines receive more attention than the one on the left (Parumasur and Roberts- Lombard, 2012).

- *Isolation*: This is the process of separating a stimulus object from other objects. The use of white space, which is, placing a brief message in the centre of an otherwise blank or white page is based on this principle, as is preceding a key part of a radio commercial with a brief moment of silence (Mookerjee *et al*, 2010).

iii. The situation

Parumasur and Roberts- Lombard (2012) note that, in perceiving a stimulus with a given set of characteristics, customers will also be influenced by the context of the stimulus, namely, the situation. The factors involved here include stimuli in the environment other than the central, focal stimulus, such as advertisement or packaging, and temporary characteristics of the individual that are induced by the environment, such as time pressure or a crowded store. For example a waitress who treats customers with politeness but not friendliness might be thought of as unfriendly in a low-mid price, mass market restaurant such as Spur, while customers in an up market restaurant might as well consider her respectful. Another example is the presence of a police officer near a police station: In this situation it is unlikely that the officer will draw undue attention. However if the police officer is noticed at a local school they are likely to draw some attention (Mukherjee, 2009). Parumasur and Roberts- Lombard (2012) state that the clearest illustration of the effect of the situation on the situation of market stimuli are blind-taste test studies such as studies on beer taste. In these tests the customers pick the brand they think is their usual or favourite brand, even when the brand names have been switched. The taste perceptions are influenced by the context that the brand names provide.

2.3.3 Interpretation and comprehension

Interpretation occurs when a person assigns a meaning to the sensory stimulus from a product or brand marketing (Parumasur and Roberts- Lombard, 2012). Comprehension is aided by expectations and familiarity. The third stage of the perception process is therefore, interpretation. According to Parumasur and Roberts- Lombard (2012), just as individuals differ in terms of the stimuli they perceive, the eventual meanings they assign to the stimuli vary as well.

Individuals tend to interpret information according to their existing beliefs, attitudes and general disposition, and their experiences – in other words, the subjective qualities and frame of references discussed earlier in section 2.2. A consumer scans his memory to retrieve previous experiences with the brand or a similar brand. Store-brand marketing frequently capitalizes on the interpretation stage when product packaging design contains logos, colours and other elements that are similar to national brands that consumers are generally more familiar with (Cross, 2012). Thus we can say interpretation is selective. Selective interpretation occurs when the stimuli are perceived, but the message itself was not interpreted in the way it was intended to be (Parumasur and Roberts- Lombard, 2012).

Kotler and Keller (2006) define consumer involvement and interpretation in terms of the level of engagement and active processing undertaken by the consumer. In responding to a market stimulus, the consumer may or may not comprehend the message that is influenced by personal factors, namely motivation, knowledge and expectations. Mostert (2002) states that during information processing, interpretation is the stage where the message to which the attention was attracted, is further analysed in terms of categories of meaning stored in memory. The desired meaning being attributed to a message depends on how a consumer categorises a stimulus through the use of existing knowledge and beliefs (Copley, 2004).

According to Mostert (2002), the process of classifying a stimulus by using concepts stored in memory is called stimulus categorisation. The categorisation will therefore involve the consumer associating this new information with something already existing (Copley, 2004). All the information and experiences individuals encounter as they go through life can end up in their long-term memory. The consumer, therefore, integrates new information and existing knowledge.

In addition to the above, consumers organise stimulus into a meaningful way. Copley (2004) explains that as with attention, comprehension is influenced by personal and stimulus factors. The personal factors influencing comprehension include motivation, knowledge and expectations which are briefly discussed in the following section:

- Motivation

Kotler and Keller (2006) define motivation as a need that is sufficiently pressing to drive a person to act. When motivated while processing an advertisement, a consumer will more likely be more involved with the advertised product.

- Knowledge

Knowledge reduces the likelihood that consumers make an incorrect interpretation of a product. For example many consumers think that since ostrich meat looks like beef, it is called ostrich beef whereas it is not.

- Expectations

According to Kotler and Keller (2006), expectations are formed from past buying experience, friends, family and brand information. For example, two identical drinks can be placed next to each other and a consumer asked to rate these drinks. If the one has a label on it the chances are very good that the two identical drinks would be rated differently. Homer (2004), concurs

that brands with high equity have high consumer loyalty, brand awareness and perceived quality. The key reason for their strength is the existence of favourable, strong and unique associations in the consumers' minds, therefore not requiring a lot of interpretation.

According to Cant (2010) the consumer can interpret the marketing message incorrectly by distorting the meaning or by misunderstanding it. Either purposefully or subconsciously, customers distort the message to fit in their likes, dislikes, prejudices and attitudes. Parumasur and Roberts- Lombard (2012) state, that the message can be distorted by levelling or sharpening.

Levelling means that consumers ignore an important piece of information or point in the marketing message, or they simplify the message, perhaps removing dissonant elements, so that it becomes more acceptable (Parumasur and Roberts- Lombard, 2012). *Sharpening* on the other hand, means that the consumer reads more information into the message by adding new elements to make it fit into his or her predispositions and value the systems. For example, some people are interested in diet, nutrition and health and may therefore be unusually sensitive to information including advertisements about fresh vegetables, fruits and vitamins. They may tend to add new dimensions to some of this information to support their beliefs and practises (Parumasur and Roberts- Lombard, 2012).

2.3.4 Retention (memory or recall)

The conclusion of the consumer perception process is the retention stage as depicted in figure 2.1. Consumers do not remember all the information they see, hear or read even after attending to it and interpreting it (Parumasur and Roberts- Lombard, 2012). Hawkings *et al* (2001) define memory as the total accumulation of prior learning experiences. This final stage of the consumer information processing model is marked by the storage of product or brand information in short-term and long-term memory. The marketer's goal is to provide positive

stimuli in the proceeding stages that translate into consumers storing the information about the product or brand into long-term memory.

Copley (2004) explains that retention is the stage where the stimulus is finally transferred into the memory and the message is noted and stored for use on a future occasion. The short-term memory component is accessed when a stimulus passes through sensory processing. It has a limited capacity to store information and sensation. Thus, short-term memory is closely analogous to what we normally call thinking. It is an active, dynamic process as opposed to a static structure (Hawkings *et al*., 2001). Long-term memory, on the other hand, is viewed as unlimited permanent storage. The brand manager should create a message that gets stored permanently.

Acceptance focuses on the persuasive effect of a stimulus. According to Copley (2004), the consumer's comprehension of a message does not automatically lead to acceptance. The consumer may understand the message but not alter buying intentions or behaviour. Shiv (1999) is of the opinion that much research on consumer information processing and decision-making has regarded consumers as dispassionate, logical thinkers, adopting a rational orientation to the various tasks they engage in. Not much attention has been given to the role of the 'heart', for example feeling and emotions. An individual might understand or comprehend the marketer's message, but do not accept the message to be relevant to the individual's lifestyle or values.

According to Parumasur and Roberts- Lombard (2012) customers tend to forget the marketing message when they are actually making the purchase that is at the point of purchase, even if they have perceived it correctly. To avoid this marketers use point of purchase promotions to remind the customer of their messages and products.

2.4 The Marketing Implication of Perception

According to Lamb *et al* (2012) marketers must recognise the influence of cues, or signals, on consumers' perceptions of products. Lamb *et al* (2012) suggest that marketers should identify the important attributes such as price or quality that the consumers want in a product and design signals to communicate the existence of these attributes to them. Whatever the cue (brand, price, product feature) that forms or influences a person's perception, it is important to realise that a short-term perception, overtime, 'decays' into a long term attitude towards the product. Marketers must carefully consider, therefore the impact that all cues that are open to interpretation may have on the consumers' perceptions and eventually on their attitude toward the product. These cues can influence a consumer's perceptions and those perceptions will determine an attitude. According to Kotler and Keller (2006), successful brand identity strategies require that organisations fully 'connect' with their consumers. Adopting a holistic marketing orientation means understanding consumer perceptions, gaining a full view of both their daily lives and the changes that occur during their lifetimes.

According Belch and Belch (2004), thorough consumer understanding helps to ensure that the right product is marketed to the right consumer in the right way. Belch and Belch (2004) also point out that knowledge of how consumers acquire and use information from external sources is important in formulating brand identity strategies. Brand managers should study how consumers consult external information, how they attend to various sources of information and how this information is interpreted and given meaning.

2.5 Means-end chain analysis

Since the 1980s, the means-end chain approach has been well rooted in marketing research (Reynolds *et al*, 1995). According to Vriens and Ter Hofsted (2000), the attractiveness of the

means-end chain approach rests on the fact that, "it's founded in the theory of consumer behavior and, at the same time, provides guidance for the development of marketing strategies". The means-end chain approach was developed as a way to understand consumers´ cognitive structures in relation to decision-making and engagement in experiences (Gutman, 1997; Grunert *et al*, 2003). It provides the basis for understanding the cognitive linkages between specific situational knowledge (attributes and consequences), and self-knowledge (consequences and values) (Gutman, 1982).The linkages from meanings to values are seen to be hierarchically structured as attributes - consequences - values (Puustinen and Kanto, 2009). According to Puustinen and Kanto (2009) means-end chains are most commonly revealed with the help of a laddering technique. Laddering is a technique that aims to identify how consumers translate the attributes of products/services into meaningful association with respect to self, following the means-end approach. Laddering proceeds by asking each respondent "why is that important to you" on each evoked concept, forcing this person to climb the ladders of the mind. The process continues until the ladder has reached a level of abstractness from which it is impossible to continue.

Puustinen and Kanto (2009) postulate that, the means-end approach is based on expectancy-value theory. Accordingly, the products are chosen because the individual believes that the product's attributes ultimately help him/her to achieve desired values (Gutman, 1997). Verplanken and Holland (2002) theorize that in order to see consumer values influencing choices and behavior, the value must be central (of high relative importance) to a consumer and cognitively activated through encountered information or situational cues. Conventional means-end analysis is a powerful tool to elicit consumers' values. However, it fails to give an accurate impression of the "encountered information or situational cues" (e.g. attributes) which activate a consumer's values. Therefore, by breaking down consumers' consumption-relevant cognitive structures, the appropriate information on how to activate these values may be lost.

2.6 The concept of perceived quality

Quality and value are not well differentiated from each other and form similar constructs such as perceived worth and utility (Zeithaml, 1988). Oslon and Reynolds (1983) recommended free elicitation approaches to obtain information about cognitive structures of consumers. These techniques included triad sorts and laddering. In the triad sorts (Oslon and Reynolds, 1983), similar brands in beverage categories were divided into sets of three and the subjects were probed for distinctions among them. This process uncovered important distinctions that consumers use to discriminate among products. It is these distinctions that formed a foundation of the theories discussed in the previous section. While modern literature (Puustinen and Kanto, 2009; Scollan *et al*, 2006; Wagner, 2007; Grunert *et al*, 2003) provides a considerable amount of empirical work on means-end chains, there are still many unresolved issues regarding the means-end chain approach and analysis.

Figure 2.2, an adaptation of a model first proposed by Dodds and Monroe (1985), affords an overview of the relationships among the concepts of price, perceived quality and perceived value. This model was developed by Zeithaml (1988), in a bid to explain consumer perception on quality and value. Zeithaml (1988) goes on to describe quality extensively, paying attention to critics arguing for and against his line of thought. The diagram shown below (on the next page) captures perceptions and their associated attributes levels. Zeithaml (1988) explained that, as is typical in exploratory studies using means – end analysis, the data generated is usually not numerical. Instead the data are normally in the form of protocols and means –end maps for individual consumers.

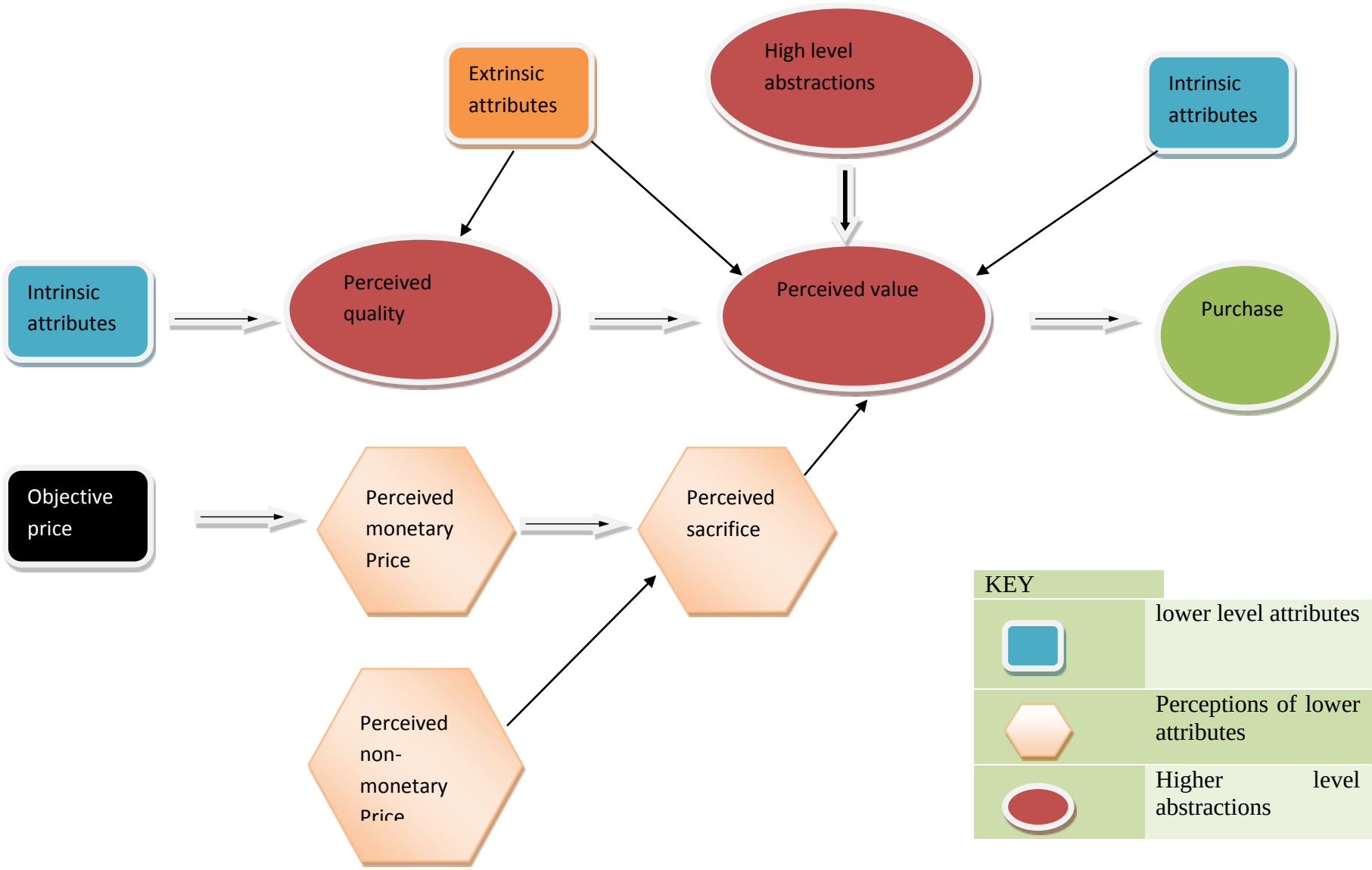

Figure 2.2 A Means-End Model Relating Price, Quality and Value: (Adapted from Zeithaml, 1988)

According to Zeithaml (1988) quality can be defined broadly as superiority or excellence. By extension, perceived quality can be defined as the consumer's judgement about a product's overall excellence or superiority. Perceived quality is (1) different from objective or actual quality; (2) a high level abstraction rather than a specific attribute of a product, (3) a global assessment that in some cases resembles attitude and (4) a judgment usually made within a consumer's evoked set.

Objective quality versus perceived quality

Holbrook and Corfman (1985) distinguish between mechanistic and humanistic quality: "... mechanistic quality involves an objective aspect or feature of a thing or event: humanistic quality involves the subjective response of people to objects and is therefore a highly relativistic phenomenon that differs between judges." Objective quality describes the actual technical superiority of products. As it has been used in literature the term objective quality refers to measurable and verifiable superiority on some predetermined ideal standard(s) (Zeithaml, 1988). According to Zeithaml (1988) concerns centre on the selection of attributes and weights to measure objective quality; researchers and experts do not agree on what the ideal standard should be. Others (such as Maynes, 1976) claim that objective quality does not exist, that all quality evaluations are subjective.

The term objective quality is related but not the same as – other concepts used to describe technical superiority of a product. Zeithaml (1988) cites the example product-based quality and manufacturing quality. Product-based quality is refers to the amounts of specific attributes or ingredients of a product. Manufacturing-based quality on the other hand, involves conformance to manufacturing specifications or service standards. Both concepts discussed here are based on perceptions. Perceived quality is quality in someone's senses, thus all quality is perceived.

Higher level abstraction rather than an attribute

The means-end chain approach to understanding the cognitive structure of consumers holds that product information is retained in the memory at several levels of abstractions as discussed earlier on in section 2.3.4. The simplest level is a product attribute; the most complex is the level of payoff of the product to the consumer. Young and Feigen (1975 cited in Zeithaml, 1988) depicted this value in the "Grey benefit chain," which is illustrated below.

Product ⟶ Functional benefit ⟶ Practical benefit ⟶ Emotional payoff

Consumers organise information at various levels of abstraction ranging from simple product attributes to complex personal values.

Judgment made within consumers' evoked set:

Evaluations of quality usually take place in terms of comparison. Maynes (1976) claimed that quality evaluations are made within "the set of goods which ... would in the consumers' judgement serve the same general purpose for some maximum outlay." A product's quality is evaluated as high or low depending on its relative excellence or superiority, among other products, that are viewed as substitutes to the consumer.

Figure 2.3 depicts the perceived quality of the conceptual model in figure 2.2. Attributes that signal quality have been dichotomized into intrinsic and extrinsic cues (Oslon 1977: Olson and Jacoby 1972). Intrinsic cues involve the physical composition of the product. Extrinsic cues are product-related but not part of the physical product itself. The intrinsic –extrinsic dichotomy of quality is useful for discussing quality, but not without conceptual difficulties. It is further explored in the Total Food Quality Model discussed in the following sub-section.

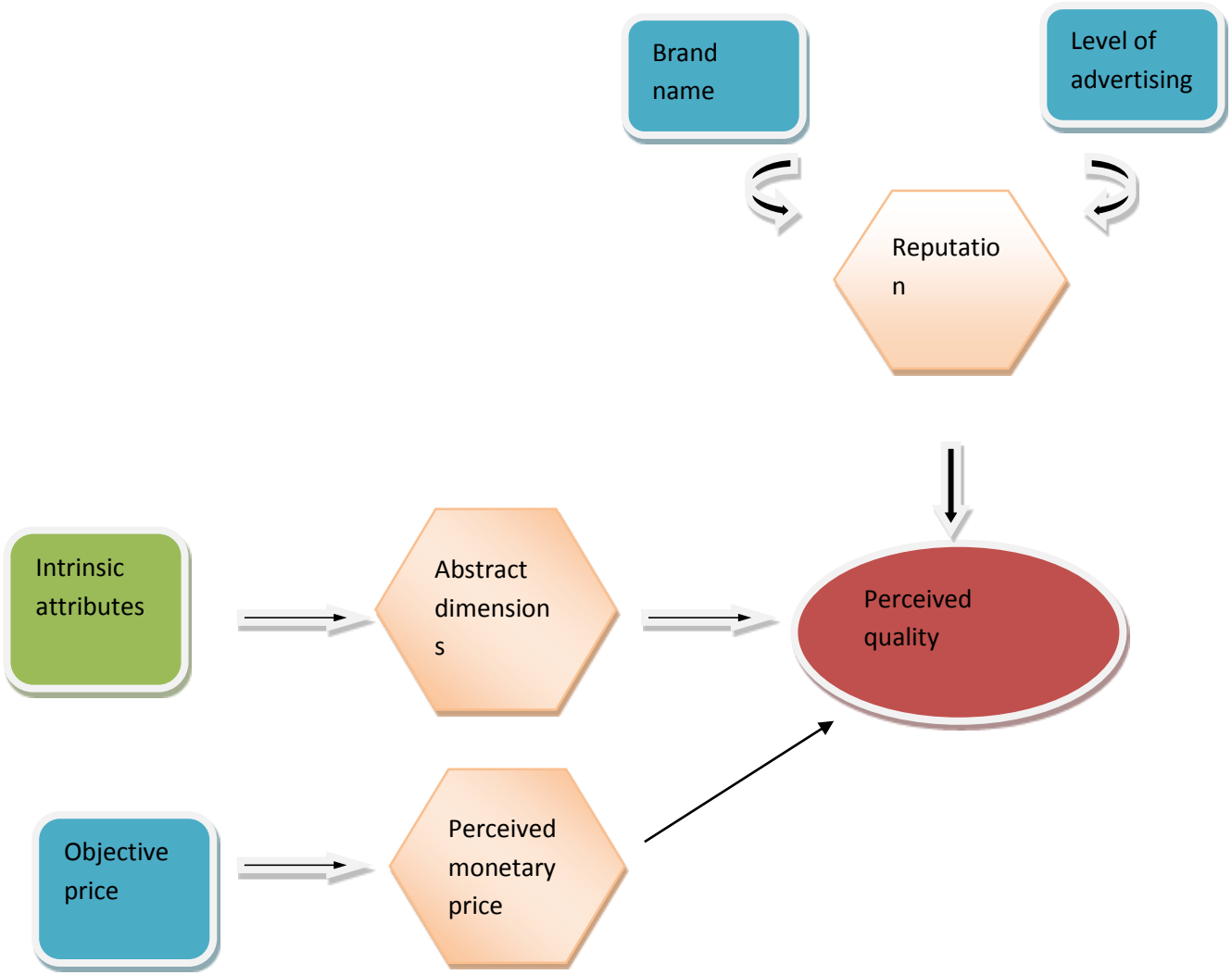

Figure 2.3 The Perceived Quality Component (adapted from Zeithaml, 1988)

	Higher level abstractions

2.7 The Total Food Quality Model

The Total Food Quality Model (TFQM), originally proposed by Grunert *et al* (1996), is an attempt to integrate a number of approaches to analysing consumer quality perception and decision-making, notably means-end chain theory (Gutman, 1982), multi-attribute attitude theory (Fishbein & Ajzen, 1975), economics of information approaches (Darby & Karni, 1973), the explanation of intention to purchase as a trade-off between give and get components (which appears in the literature in many guises, mainly as extensions of the multi-attribute framework, as in the Theory of Reasoned Action and the Theory of Planned Behaviour), and the explanation of consumer satisfaction as the discrepancy between expected and experienced quality (Oliver, 1980).

The Total Food Quality model is shown in Fig. 2.2. According to Grunert *et al* (2003) it should be noted that a number of similar models have been proposed in the literature (Andersen, 1994; Poulsen, Juhl, Kristensen, Bech, & Engelund, 1996; Steenkamp & van Trijp, 1996 cited in Grunert *et al* 2003). The TFQM distinguishes between 'before' and 'after' purchase evaluations. Dimensions of quality are commonly categorized into search, experience and credence characteristics (Darby & Karni, 1973), depending on when the consumer can ascertain a quality: a search quality (like the appearance of a piece of meat) can be evaluated before the purchase, an experience quality (like the taste of the meat) can first be evaluated after the purchase, and a credence quality (like the healthiness of the meat) can, under normal circumstances, not be evaluated by the average consumer at all, but is a question of faith and trust in the information provided (Grunert *et al*, 2003). According to Grunert *et al* (2003) many characteristics of a food product, like taste, cannot be ascertained before purchase, i.e. most food products have only search characteristics to a limited degree.

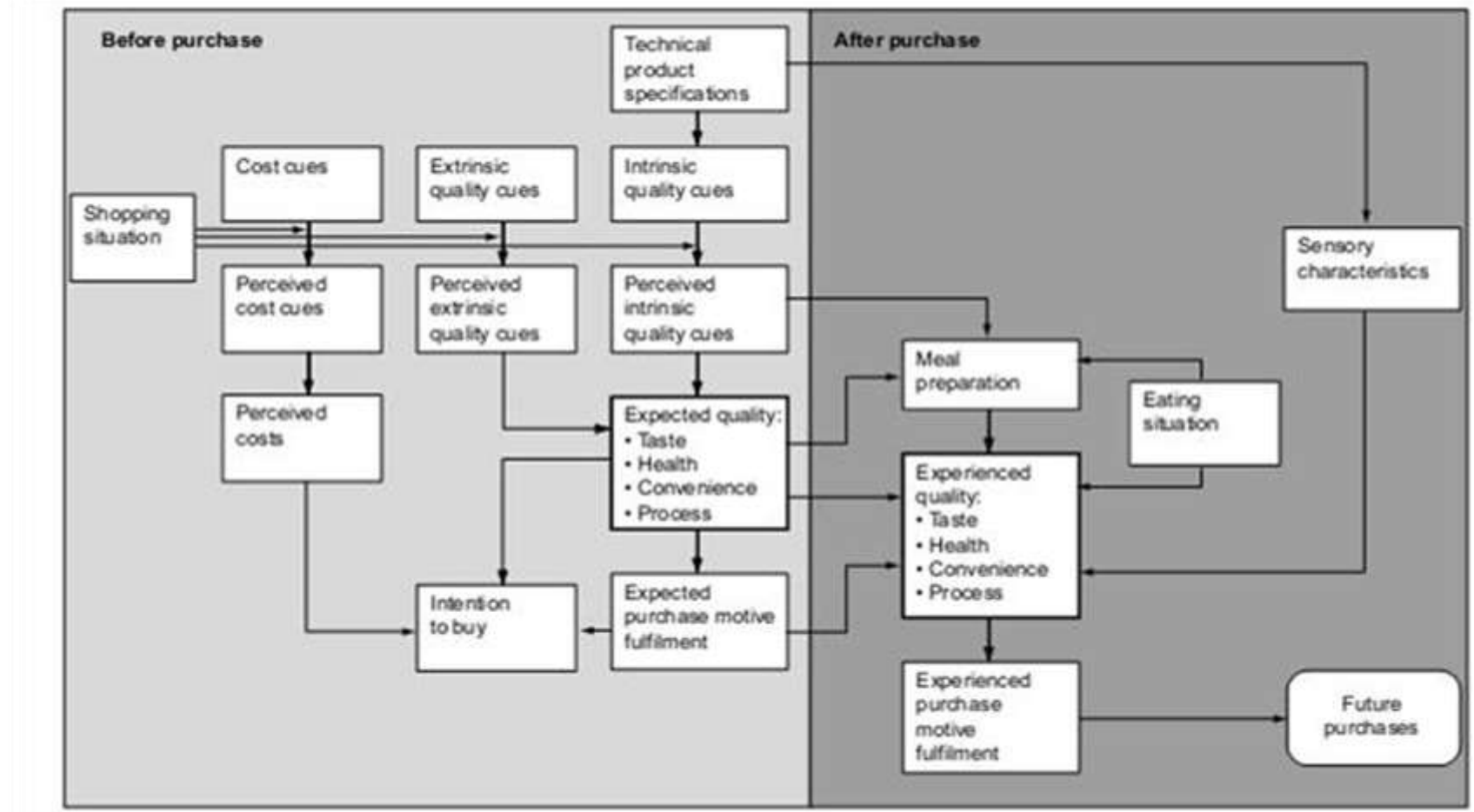

Fig 2.4 Total Food Quality Model: Source Grunert (2005)

In order to make a choice, the consumer will develop expectations about quality—but it is only after consumption that experienced quality can be determined, and even this is limited in the case of credence characteristics like the healthiness of a product (Grunert, 2005).

The distinction between before and after purchase thus forms the basis of the TFQM. In the before purchase part, the model shows how quality expectations are formed based on the quality cues available. Cues are pieces of information used to form quality expectations (Steenkamp, 1990). The intrinsic quality cues cover the physical characteristics of the product, and are related to the product's technical specifications, which also include its physiological characteristics, i.e. characteristics that can be measured objectively. The extrinsic quality cues represent all other characteristics of the product, such as brand name, price, distribution, outlet, packaging, etc. Of all the cues consumers are exposed to, only those, which are perceived, will have an influence on expected quality. The cues consumers are exposed to and those they perceive are affected by the shopping situation: the amount of information in the shop, whether purchases are planned or spontaneous, the pressure of time while shopping, etc.

According to the TFQM, quality is not an aim in itself, but is desired because it helps to satisfy purchase motives or values. The model therefore includes motive or value fulfilment, i.e. how food products contribute to the achievement of desired consequences and values.

Extrinsic cues such as a label and its content may, for example, generate expectations about exceptionally high eating quality—giving the consumer a feeling of luxury and of pleasure in life. The values sought by consumers will, in turn, have an impact on which quality dimensions are sought and how different cues are perceived and evaluated. The sequence from cues, through quality, to purchase motives forms a hierarchy of increasingly abstract cognitive categories.

Expected quality and expected fulfilment of purchase motives constitute the positive consequences consumers expect from buying a food product, and are offset against the negative consequences in the form of various (mostly monetary) costs.

2.8 The SA Consumer

Indubitably Adam Smith's axiom (1776), "*consumption is the sole end and purpose of all production,"* has become a factual statement in this era of consumerism. In order to enhance customer satisfaction, it is critical to address customer needs and take a value chain approach (Schutte, 2006). Customer satisfaction is presented as a source of sustainable competitive advantage and the reason for the existence of the beef supply chain. Customer value is defined as the basis for customer satisfaction. Customer value is a combination of key market attributes such as products and services, quality, price and delivery. Enhanced value, as perceived by the customer, will lead to customer loyalty and will decrease the effects of competition (Thompson *et al.,* 2005).

The South African consumer market is heterogeneous and consists of different races with different cultures and market segments with varying needs and preferences. Changes in the South African market are driven by a growing economy and population, as well as by the emerging black middle-class, or "black diamonds" (Lamb *et al,* 2012). According to Lamb *et al,* (2012) the SA consumer market can be segmented through Living Standard Measure (LSM) categorisation. Studies indicated that the lower LSM groups spend a higher proportion of their disposable income on food than the higher income groups. The middle income groups tend to expend more on meat in proportion to their disposable income. The emerging black consumers are moving from the lower LSM groups toward the middle and higher LSM groups. The growing black diamond group is one

of the major driving forces of the recent increase in per capita spending on beef. The high LSM groups are spending a lower proportion of their disposable cash income on food and meat (Bureau for Food and Agricultural Policy, 2012).

The majority of South African consumers are very price sensitive regarding beef purchases. Taljaard *et al.* (2006:4) state that SA meat demand is influenced by five factors, namely disposable income, own price of beef, price of related meat products, changes in size and structure of the population and changes in consumers' taste and preferences. The first three factors are economic factors. Taljaard *et al.* (2006:6) found that the non-economic factors influencing demand are becoming more important than in the past.

2.9 Consumer Trends

The six most important worldwide consumer food trends are convenience, versatility, environmental and ethical issues, value for money, health consciousness and simplicity (Bureau for Food and Agricultural Policy, 2012). One of the trends is a general worldwide increase in customer concern regarding health, diets and food safety. Internationally, this relates to issues such as traceability, animal welfare, diseases and production processes, sustainable agricultural practices, and naturally- and organically-produced beef. However, most South African consumers are generally less concerned about meat safety and animal welfare than their counterparts in other developed countries. According to Loureiro and Umberger (2007) consumers still purchase meat from the informal sector such as street vendors and the informal, highly unregulated sector of unlawful slaughtering, which are highly vulnerable to meat safety concerns. The concerns of the South African consumers with regard to food safety, animal welfare and health consciousness are expected to increase over time (Loureiro & Umberger, 2007:497)

Concerns about animal welfare, sustainable agriculture and production, and health issues such as obesity are also on the rise (Grunert, 2006). Food labelling and trademarks may promote customer assurance to a large extent. Although organically-produced products form a significant international global food trend, this is a small niche market (Loureiro & Umberger, 2007:497).

Another major trend is consumers' need for convenience. Convenience relates to all aspects regarding saving time and effort for the consumer. Although the SA consumer market differs from international markets, SA consumers' need for convenience corresponds to a great extent with international consumers' expectations (Thompson *et al.,* 2005; Grunert, 2006).

Another trend is the consumers' need for versatility. The consumer wants to be able to eat a variety of meals, which relates to a variety of meat types and cuts, as well as preparation alternatives. Meat quality is evaluated based on information available about the meat, not only on the meat itself. Customers use intrinsic and extrinsic cues when determining meat quality. This provides opportunities for more differentiation of meat products, new requirements for the meat value chain in terms of delivering meat, and the provision of more information regarding the product. Grunert (2006), states that extrinsic cues will play a greater role in influencing the buying behaviour of the consumer in the future.

The needs of the customer form the basis for the existence of a supply chain. Knowledge of the different market segments and what constitutes customer value is the starting point of a successful business. The consumer of today has increased knowledge and power. Although the beef value chain is demand-driven, there are opportunities for delivering increased customer value and satisfaction. Supply chains must therefore be aligned to customer market segments (Thompson *et al.,* 2005).

Table 2.1 below shows that South Africa does not produce enough beef for the domestic market even though the number of cattle slaughtered increased considerably from 1999/00 to 2008/09. Beef consumption was higher than beef production throughout the period under analysis. Both production and consumption followed the same trend. Both declined in 2000/01 and increased constantly from 2001/02 due to rising living standards and increased disposable income of larger number of consumers before reaching the highest level in 2006/07.

Duffy (1999 cited in Taljaard *et al.* 2006) and Huston (2000) state that there has been no shortage of analysis of the factors influencing demand for meat in general by consumers. Duffy (1999 cited in Taljaard *et al.* 2006) is of the opinion that the simple relationship of price and consumption no longer applies. Huston (2000) goes further and calls into question the ability of price movements alone to explain problems relating to the demand of meat. Huston (2000) argues that there are several forces at work in the market place that undermine "red" meat demand, namely (i) perceptions that meat is old-fashioned and boring with questionable safety, (ii) perceptions among consumers that meat is too difficult and time-consuming to prepare, (iii) questions surrounding meat's healthfulness (specifically concerns about fat and cholesterol) and (iv) prices too high for some consumers to justify its purchase (leading them to select a product that they perceive has better value).

Table 2.1: Total cattle slaughtering, production and consumption of beef

Year	Cattle slaughtering	Production	Consumption
	Head	Kilograms	Kilograms
1999/00	2,726,000	512,000,000 <	671,000,000
2000/01	2,302,000	625,000,000 <	555,000,000
2001/02	2,510,000	525,000,000 <	603,000,000
2002/03	2,535,000	574,000,000 <	644,000,000
2003/04	2,599,000	610,000,000 <	675,000,000
2004/05	2,671,000	632,000,000 <	723,000,000
2005/06	2,972,000	672,000,000 <	817,000,000
2006/07	3,077,000	769,500,000 <	861,000,000
2007/08	2,781,000	830,700,000 <	784,000,000
2008/09	2,910,000	750,600,000 <	815,000,000

Source: Department of Agriculture, Forestry and Fisheries (2010).

Duffy (1999) identified two broad classifications for factors that influence the demand for meat, namely economic and non-economic factors. Economic factors, on the one hand, include income and price. In other words, consumers will generally increase their consumption of meat when real income increases, whilst consumption will decline when price relative to other meats rises. Noneconomic factors, on the other hand, include issues pertaining to health and safety, convenience, quality, animal welfare and the environment.

Taking into account the above, Quinn (1999) is of the opinion that the meat industry worldwide is living in the past, instead of looking to the future. Quinn (1999) states that the past was characterized by managed markets, with largely captive customers and endlessly rising demand.

In the future, customers will call the shots, and the businesses that succeed will be those who recognize this fact and who act on it. This is echoed by Smith (1999), who states that to be "consumer-driven" means that beef, pork and lamb producers can no longer merely produce what they (individually or collectively) think is best (or easiest, or most economical, etc.) and expect the world to come begging for more; instead, it means that at each critical juncture in the beef, pork and lamb production sequence, consideration must be given to what consumers want and are willing to buy.

Finally, Smith (1999) and Quinn (1999) summarize the factors that need to be accounted for, so as to turn around the depressed state of red meat demand. These factors are discussed below.

Properties which influence consumer demand for processed (prepared) beef, pork and lamb products include:

(a) **Novelty** (new and different, changed in form, modernized, with added value);

(b) **Quality** (taste, tenderness, physical attractiveness, storage stability);

(c) **Simplicity** (quick, fast, time-saving, uncomplicated);

(d) **Convenience** (easy to prepare, easy to serve, easy to clean up after);

(e) **Safety** (bacteriologically safe, chemically safe); and

(f) **Consistency** (similarity in appearance from purchase to purchase, similar in performance from preparation to preparation, similar palatability from eating experience to eating experience).

2.10 Summary

This Chapter reviews the literature pertaining to this research project. The literature discussed in this chapter mainly focused on how consumer perceptions are formed. This entailed discussing *the nature of perception*; the perceptual process and the marketing implication of perceptions. The concept of perceived quality as brought by the means-end chain analysis and the total food quality models was also reviewed. The literature review also focused on the different profiles of the South African beef consumer. Finally consumer trends dating as far back as 1999, were discussed to give a clear picture of the consumption trends.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Introduction

This chapter gives an overview of the research methods used to carry out the study. The chapter commences by describing how the study area was selected. The location, socio-demographic and main economic activities of the selected study areas are explained in this chapter. The Alice Town boundary map is also shown. Sampling procedure, data collection techniques and data analysis methods used in the research are also explained. The chapter closes by identifying the limitations of the study.

3.2 Selection of the study area

The study was conducted in the Eastern Cape Province, specifically in Alice town and the surrounding rural areas (Ntselamanzi, Gaga, Hillcrest, Gqumashe, and Dyamala) of the Nkonkobe municipality. In Alice, there exist rural and urban areas, as well as formal and informal butcheries which allowed the drawing of an unbiased sample from the beef consuming population. As a way of increasing the representativeness and validity of the research findings, other rural communities surrounding the town were systematically selected.

3.3 Description of the study area

The Nkonkobe Municipality is the second largest Municipality in the Amatole District, covering an area of some 3 725 km^2 with a population density of 43 people per square kilometre (National Treasury, 2012). Alice is the second largest town in the Municipal area with a population of 9,788 people. Alice is a small rural town where jobs are scarce and a high proportion of young people

are highly skilled (National Treasury, 2012). The large rural hinterland which is reliant on Alice as a service centre is steeped in poverty (National Treasury, 2012). The areas immediately surrounding Alice are rural in nature, with a number of small settlements established on the outskirts of Alice, which are heavily reliant on Alice as a service centre.

The following image provides an overview of various areas in Alice:

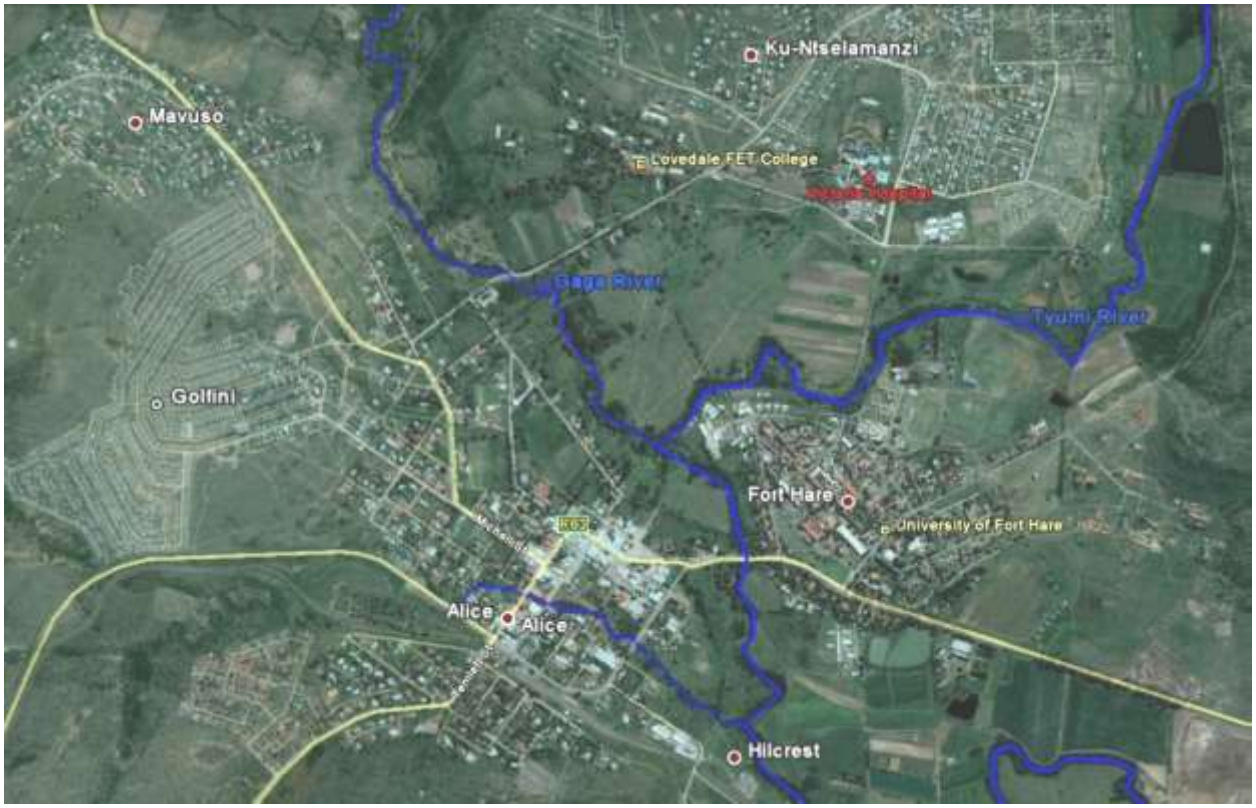

Figure 3.1 Alice Town Map - Source: Google Map

3.4 Research design

This study employed a cross-sectional research design. Data was collected at one point in time on several variables such as demographics, household socio-economic factors, consumer perceptions and willingness to pay for quality enhancement. Both qualitative and quantitative data was

gathered on demographics, household socio-economic factors, market perceptions and attitudes regarding beef.

To collect information about consumer perceptions and attitudes regarding beef, a survey of consumers from households located in Alice was conducted via in-person interviews. A copy of the survey instrument (in English) is provided in Appendix A. Sections C, D, I, H and O of the questionnaire were adapted from Malindi (2010).

The survey instrument was designed to gain an understanding of consumer perceptions and attitudes about beef food safety, healthiness, risk and marketing in general. In addition, socio-demographic information about each respondent, meat consumption habits, questions regarding the amount of trust in various sources of information, food safety knowledge, and product attribute and labelling preferences were collected. Each respondent also completed a kind of choice experiment designed to determine the amount consumers would be willing to pay for various beef steak quality enhancement attributes.

Collectively, this information provided a wide-ranging evaluation of consumers' views and preferences about beef products. The surveys were conducted through the assistance of fellow post-graduate colleagues from the University of Fort Hare. For the surveys, the post graduate enumerators targeted one adult per household who was familiar with shopping habits.

Target respondents were older than 18 years of age and overall could give their own consent willingly to participate in the survey. The surveys were estimated to take approximately 30 minutes for each respondent to complete. Most questions were designed with a list of options for respondents to select from or requested rankings of information, including choice experiments (discussed later). Some questions had no choices provided but were closed. Questions were

presented in systematic sequence, starting with the demographic information then progressing to perception seeking questions.

All surveys were completed between October and November 2012. Respondents were assured their answers would be anonymous and no information was collected about specific respondent identities beyond demographics. All respondents also signed consent forms in line with the university ethical clearance regulations.

3.5 Units of analysis

The study presented herein employed a personal survey to investigate beef buyers and consumers' characteristics, attitudes, perceptions and buying behaviour. Within this study, perception, attitudes, and buying behaviour relating to beef and how it is marketed were also explored. The focus of this study is concerned with general beef consumers and their perceptions about beef. In this study, individual buyers of beef on behalf of beef consuming households provided primary data. Anyone who bought beef for their own consumption or family consumption was deemed as a unit of analysis. The beef consumers were from Nkonkobe municipality in the Eastern Cape as described in the above sections.

3.6 Sampling frame and sample size

With the Alice population size of 9788 (National treasury, 2012), not all beef consumers could be selected for the study; so a sample was drawn. Normally, for a sample to best represent the total population, a complete frame should be employed. Bless and Smith (2000) define a sampling frame as a list of all units from which a sample is to be drawn. However, considering the nature of

this research, drawing a list of all the beef consumers from a population of 9788 people was impractical.

For the calculation of the sample size of a population of 9788, the sample size was established as being of 270 interviewees. This number was based on the following formula proposed by Martins (2002):

$$n = \frac{(z^2 * p * q)}{e^2}$$

Where: n = number of interviewed people;

z = 1.96 (value of the normal distribution standard - reliable level of 95%);

p = ratio of respondents for option "yes" (p = 0.5);

q = ratio of respondents for option "no" (q = 0.5);

e = sample error (maximum tolerable difference; e = 0.05).

The value p = q = 0.5 is recommended for the cases where one does not know anything about the possible ratios of respondents for yes/no - population parameter.

In terms of the numbers selected in Table 3.1, the sample size *n* and margin of error *E* are given by:

$$x = Z(^{c}/_{100}) * 2r(100 - r)$$

$$n = N\,^{x}/_{((N-1)E2+x)}$$

$$E = Sqrt\,^{[(N-n)x}/_{n(N-1)]}$$

Table 3.1 Sample size determination

Descriptive Statistic	Value	Description
margin of error	5%	The amount of error that can be tolerated.
confidence level	90%	The amount of uncertainty that can be tolerated.
population size	9788	The number of people there are to choose the random sample from.
response distribution	10%	Minimum percentage of population expected to consume beef
Established sample size	**97**	**This was the minimum established sample size for the survey.**

Where N is the population size, r is the fraction of responses that we are interested in, and $Z^{(c/100)}$ is the critical value for the confidence level c.

The recommended sample size based on Martins' (2002) equation was used to calculate the consumers of beef, which had been interviewed personally with the assumption one in every three South Africans, eat beef.

3.7 Sampling method

Non-probability sampling procedure was employed to sample consumer. According to Bless and Smith (2000), non-probability sampling refers to a situation in which the probability of including each element of the population in a sample is unknown. The availability (accidental) sampling

method was used together with random sampling. The advantage for using accidental sampling method was that only those people who were conveniently available were interviewed so as to obtain a large number of completed questionnaires quickly and economically as argued by Monette *et al* (1998).

3.8 Data analysis

The data collected was captured and analyzed using SPSS. Data analysis was centered on the models and analytical tools summarized in the table below. The flow of Table 3.2 below connects the objective, research question, hypothesis, variables, analytical tool and model in a simple format to comprehend.

Table 3.2 Research Flow Analysis Summary

	Objective	Research Question	Hypothesis	Variables	Analytical Tool	Model
1.	To determine socio-economic factors influencing the clusters existing in the beef market.	How do the socio-economic factors among different beef consumers influence consumption patterns?	*H_1: There exists a relation between socio-demographics and consumption patterns.*	Age; income; household size; level of education; number of children below 12; number of adults above 65	**Descriptive Statistics**	**Descriptive statistics**
2.	To identify homogenous groups of beef consumers and their prevailing consumption patterns	What market segments exist among beef consumers in the Alice beef market?	*H_0: There are **no** significant market segments in the Alice beef market.*	Place of purchase; purchase frequency; level of education; safety concerns; price and consumption habits; buying habits;	**Multi Correspondence Analysis (MCA)**	**Cluster Analysis (CA**
3.	To assess the level of consumer awareness on the importance of health and marketing information.	To what extend are consumers informed about beef product? How important are sources of information to consumers?	*H_0: Consumers have inadequate information on health and marketing of the product and it is important to them.*	Animal welfare; origin of animal; commercials for meat; meat scandals in media; packaging	**Descriptive statistics**	**ANOVA**
4.	To relate consumer perceived quality, value and price to consumer satisfaction	How do consumers relate self-perception, price perception and benefit perception in their deliberations about beef?	*H_1: There exists a relation between perceived quality, value, and price and customer satisfaction*.	Price, fat content, proximity of store, scent, tenderness, shelf life, production, method, store, taste, type of cut, quality after preparation,	**Dimension Reduction**	**Factor Analysis**

3.9 Conceptual framework

3.9.1 Factor Analysis

Factor analysis is a multivariate statistical procedure for grouping similar variables into subset when they are highly correlated (Johnson 1998, p.148). For example, if variable A, B and C were highly correlated, they may be represented by a factor. If variable D, E and F are highly correlated and different from the variables in the first factor, they could be represented by another factor. Thus, factor analysis is typically used to summarize the variation among many variables in terms of a few underlying but unobservable random variables called factors (Jobson 1992, p.388).

Factor analysis is a statistical method used to study the dimensionality of a set of variables. In factor analysis, latent variables represent unobserved constructs and are referred to as factors or dimensions (Kim and Mueller, 1978). According to Thompson (2004) there are two types of factor analysis exploratory and confirmatory. Thompson (2004) explains that exploratory factor analysis (EFA) is used to explore the dimensionality of a measurement instrument by finding the smallest number of interpretable factors needed to explain the correlations among a set of variables. According to Thompson (2004) this is exploratory in the sense that it places no structure on the linear relationships between the observed variables and on the linear relationships between the observed variables and the factors but only specifies the number of latent variables

Confirmatory factor analysis (CFA) on the other hand is used to study how well a hypothesized factor model fits a new sample from the same population or a sample from a different population – characterized by allowing restrictions on the parameters of the model (Thompson, 2004).

The survey questionnaire in this study included adopted a model used by Kim and Boyd (2004) of using observable variables (forty seven survey questions for this study) that were considered to be important in beef purchasing decisions, and factor analysis allowed for the reduction of these forty seven variables to more manageable smaller set of factors. According to the definitions given by Thompson (2004) above, this study employed exploratory factor analysis. It is exploratory because I did not have a pre-defined idea of the structure or how many dimensions are in a set of variables.

Based on this theoretical foundation, the conceptual factor analysis model that is developed in this study can be specified as:

$$\boldsymbol{x} = \boldsymbol{\lambda F} + \boldsymbol{\varepsilon}$$

Where:

$\boldsymbol{x}$ is a p variate response vector ($p \times 1$) of the forty seven observed variables,

$\boldsymbol{\lambda}$ is a ($p \times$ m) matrix of factor coefficients with m< p condition,

$\boldsymbol{F}$ is a vector (m $\times$ 1) of unobserved factors for k =1, 2…, m; and

$\boldsymbol{\varepsilon}$ is an error vector ($p \times 1$) that is independently distributed of F for j =1,2,…, p.

The multipliers, λ_{kj} are called factor loadings which are correlations between the factors (F) and standardized original variables (x). The factor loading λ_{kj} is interpreted as the loading of the j^{th} response variable on the k^{th} factor. The factor loading process generates a new set of latent factors (F_{jk}) and assigns a score for each of the factors. The factor scores are the correlation coefficients between the observable variables and the identified factors.

The factor analysis was run in SPSS 21.0 with varimax rotation to produce orthogonal factors. This means that factors are not correlated to each other. This setting is recommended by Jack (1971) when identifying variables to create indexes or new variables without inter-correlated components.

3.9.2 Cluster analysis

Using cluster analysis, a customer 'type' can represent a homogeneous market segment (Burns and Burns, 2008). Burns and Burns (2008) advise that identifying consumers' particular needs in that market allows products to be designed with greater precision and direct appeal within the segment. They argue that targeting specific segments is cheaper and more accurate than broad-scale marketing. Customers respond better to segment marketing which addresses their specific needs, leading to increased market share and customer retention (Burns and Burns, 2008).

Although the cluster analysis can also be understand as a part of exploratory analysis it should not be of first steps (Pacákov, and Poláčkova, 2013). The data preparation should ensure that only the relevant indicators are included in the analysis. Pacákov, and Poláčkova, (2013) state that the data preparation should handle the following problems:

1. Missing values;
2. Variables selection;
3. Multicollinearity;
4. Standardisation.

The data used in this study handled these problems accordingly. There were no missing values from the data, all the variables were selected and the data standardised. The principal

component analysis (PCA) was used for the reduction of dimensionality and multicollinearity in the model. Field (2005) states that, the overall goal of principal component analysis is to reduce the dimensionality of a data set, while simultaneously retaining the information present in the data. By reducing a data set from a group of related variables into a smaller set of components, the PCA achieves parsimony by explaining the maximum amount of common variance using the smallest number of explanatory concepts (Field, 2005).

Since the number of groups or clusters that would emerge in the acquired sample was unknown and an optimum solution was required, a two-stage sequence of analysis as suggested by Burns and Burns (2008) was used as follows:

1 A hierarchical cluster analysis using Ward's method applying squared Euclidean Distance as the distance or similarity measure was carried out. This helps to determine the optimum number of clusters we should work with.

2 The next stage reran the hierarchical cluster analysis with the selected number of clusters, which enabled the allocation of every case in the sample to a particular cluster.

3.9.3 Analysis of Variance (ANOVA)

Milligan and Cooper (1985) and Cooper and Milligan (1988) compared thirty methods for estimating the number of population clusters using four hierarchical clustering methods. The three criteria that performed best in these simulation studies with a high degree of error in the data were a pseudo *F* statistic developed by Calinski and Harabasz (1974), a statistic referred to as $J_e(2)/J_e(1)$ by Duda and Hart (1973) that can be transformed into a pseudo t^2 statistic, and the cubic clustering criterion.

This study employed the pseudo F statistic approach. Since the data was run using SPSS 21.0 a simple F test was used to determine the significance of the cluster differences as suggested by Burns and Burns (2008)

CHAPTER 4: RESEARCH FINDINGS AND DISCUSSION

4.0 Introduction

This chapter is a presentation of the research findings on the characteristics and profiles of sampled beef consumers. The profiles are based on data collected from the respondents as fully discussed in the previous chapter. The presentation of the empirical results is divided in three parts. First the findings related to beef consumers behaviour and preferences are presented. Afterwards the discussion focuses on consumers' perceptions and beliefs on beef and in the factor analysis of those perceptions. Finally an identification of beef consumers segments on the basis of perceptions will be done.

4.1 Beef consumers behaviour and preferences

Table 4.1 Main demographics of the sample

SAMPLE		Percentage
Gender	✓ Male	38%
	✓ Female	62%
Marital status	✓ Married	13%
	✓ Single	84%
	✓ Other	3%
Religion	✓ Christian	94%
	✓ Non-religious	4%
	✓ Hebrew	2%
Ethnicity	✓ Black	84%
	✓ Coloured	8%
	✓ White	8%
Place of residence	✓ Urban	48%
	✓ Rural	52%

Table 4.1 summarizes the main characteristics of the sampled consumers. It presents the distribution of the demographic variables gender, marital status, religion, ethnicity, place of

residence. The socio-demographics of the consumers were expected to influence their perceptions and purchasing habits. As mentioned in Chapter 3, the sampling done was non-probabilistic with rational choice, based on a sample of people aged between 18 and 80 years, who were responsible for food expenditure for the family of reference. The results showed that socio-economic factors such as gender, level of education, household size and income influence the way consumers purchase beef. The results prove that the first objective of the project was met and the corresponding research question was answered.

4.1.2 Age and household size

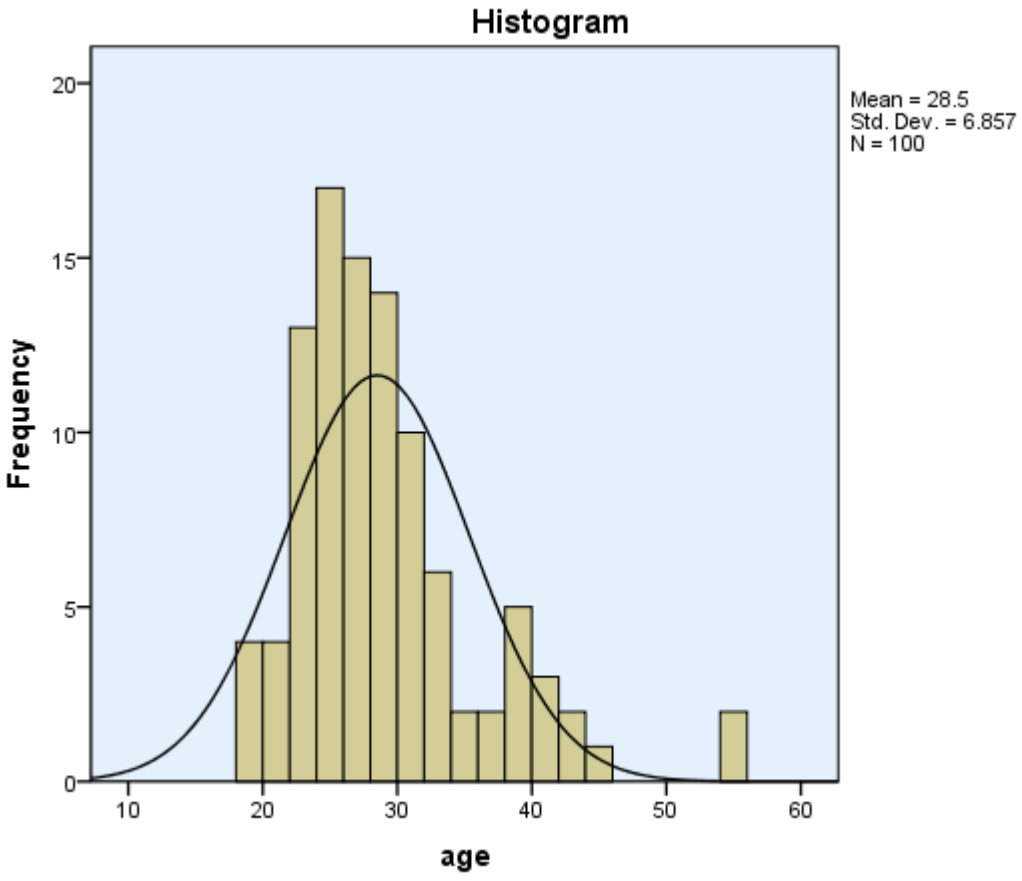

Figure 4.1: Distribution of respondents by age groups

The histogram in Figure 4.1 shows that the age of the respondents was normally distributed. The youngest respondent was 19 years old and the oldest was 55 years old. The average age

was 29 years, and the modal age was 25 years. The interviewed respondents represented 100 households. In those households the oldest person who ate beef was 79 years old. The average age of the cooks was 20 years. The average household had three cooks, and yet most households had two cooks. There were five people in an average household. The largest household had thirteen people and the smallest had one person. The households involved in the survey had an average of four beef eaters.

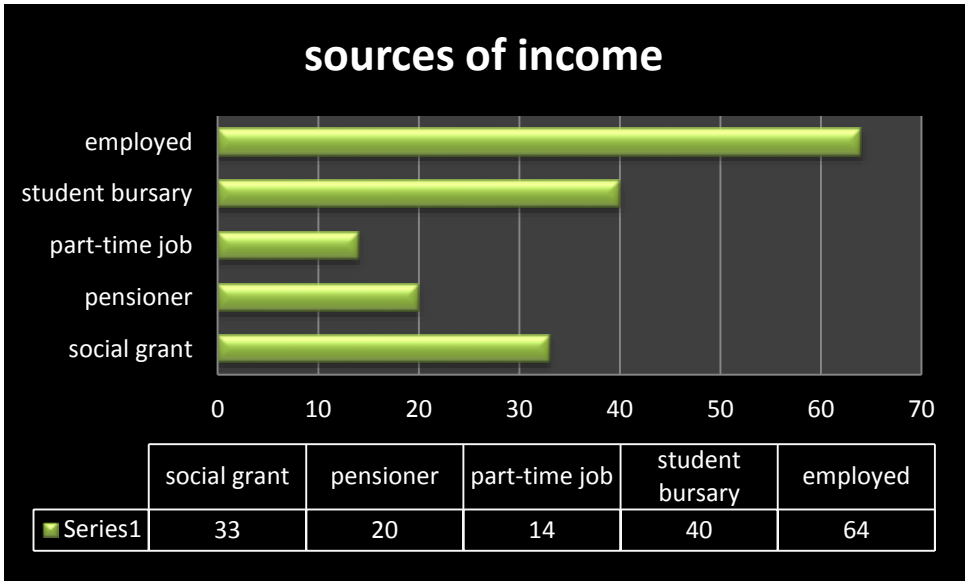

Figure 4.2: Sources of income

The interviewees were asked to reveal their sources of income. Most households had more than one source of income, others had only one. As indicated in Figure 4.2, more than half of the interviewed consumers dwelt in a household in which there was at least one person employed. The bar chart above shows the exact figures of sources of income. It is important to know the source of income because it helps understand the purchasing power of the consumer. Knowing the source of income also helps explain the buying behaviour of the consumers. Special cuts such as T-bone steak, and processed meats like burger patties and sausages were mainly bought by full time employed consumers and students.

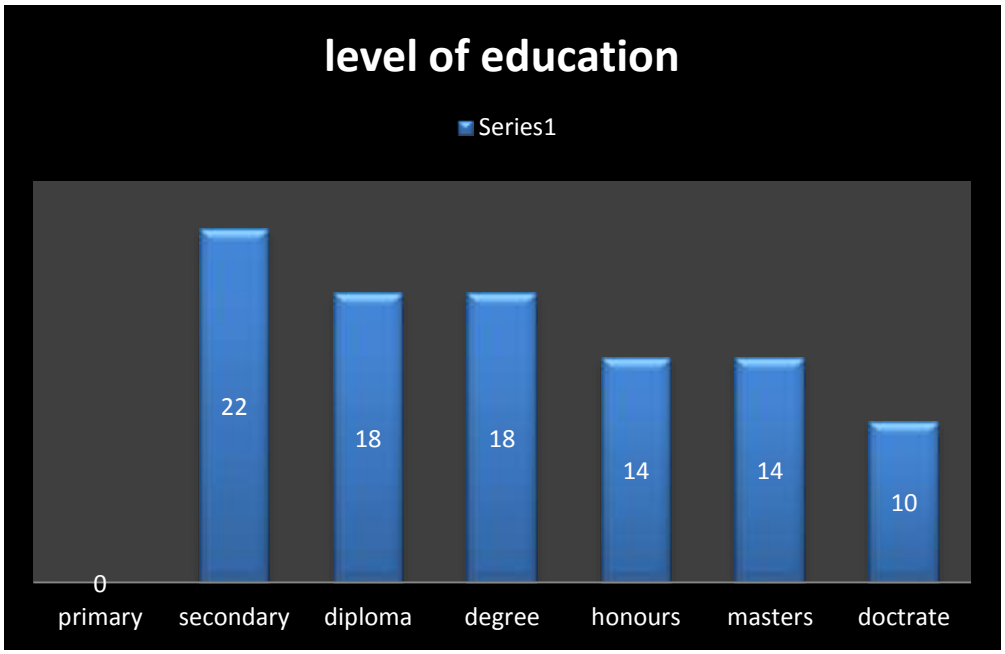

Figure 4.3 Level of Education

The graph above shows the proportions of the respondents' level of education. Twenty- two percent of the respondents had at least a secondary level education. Seventy four of the respondents had a tertiary qualification. It was discovered that consumers earning more than R10 000, with at least a tertiary qualification, were likely to buy processed meat like sausages, burgers and special steaks such as T-bone steak, rump, sirloin, porterhouse etc. these consumers ate beef at least thrice a week at home as well once a month in upmarket restaurants.

These research findings give enough reason to reject the null hypothesis and accept the alternate hypothesis, as they prove that there exists a relation between socio-demographics and consumption pattern

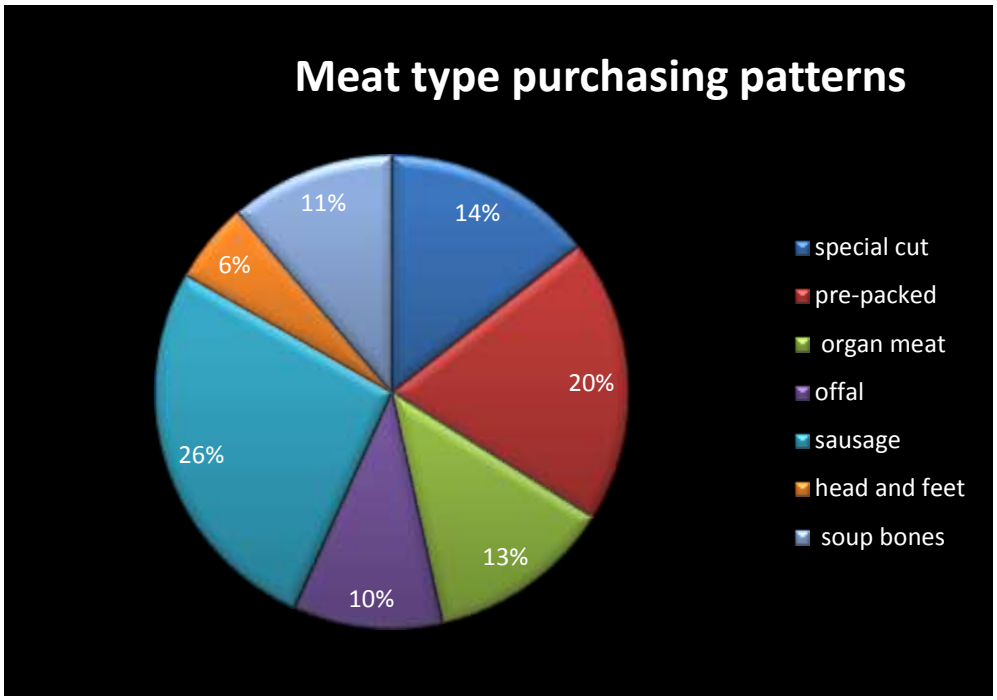

Figure 4.4: Meat type purchasing patterns

All the consumers who participated were asked the type of beef that they bought in the years 2012 and 2013 as well as how often they bought the meat. 14% acknowledged the consumption of special beef cuts such as T-bone steak, rump, sirloin, porterhouse etc. Twenty percent agreed to purchasing pre-packed unidentified steak. Thirteen percent purchased organ meats, and twenty six percent processed meats. These respondents who purchased the meat types in the pie chart are the ones considered in this study mainly beef consumers, and it is their behaviour, preferences, and perceptions that will be analysed subsequently. On average, beef consumers eat beef once a week and approximately forty five percent declared that they had decreased their consumption of beef in the past five years. It was noted that consumers earning an income less than R5 000 were more inclined to purchase cheaper forms of beef such as offal, pre-packed unidentified steak, organ meat, cheaper processed meat as well as head and feet. It was also noted that most of the consumers in this category consumed beef mainly at home or low income diners such as caravan restaurants.

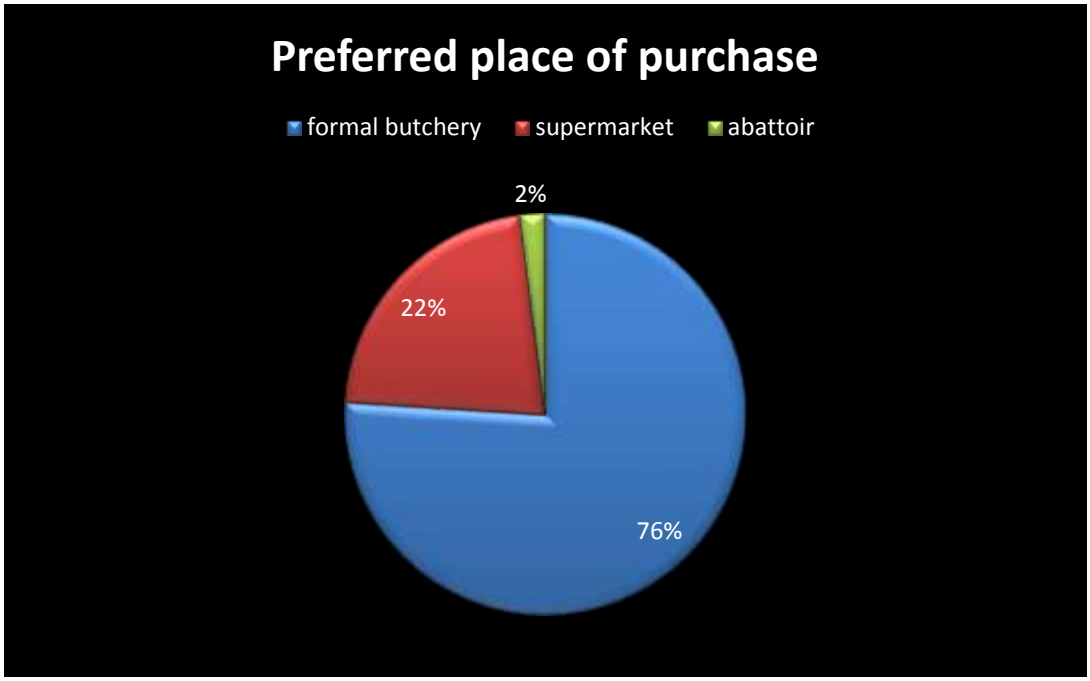

Figure 4.5: Preferred place of purchase

Figure 4.5 shows the preferred place of purchase by consumers. For health related reasons all respondents preferred to buy beef from formal outlets. The proportions shown in the figure above give a clear indication that most (seventy six percent) buyers prefer formal butcheries and twenty-two percent prefer buying from the supermarkets. The smallest percentage showed that they preferred buying straight from the abattoir.

Table 4.2: Purchasing Evaluation

Twenty eight percent of the consumers (see appendix 2, table C1) strongly disagreed that they

C	Before Purchasing Evaluation	Mean	Mode	Std Dev.
1	I normally buy meat according to nutritional value on the pack	2.88	3	1.486
2	I highly consider the shelf life of the meat pack when buying meat from the shopping centres	4.00	5	1.255
3	I normally look out for the roller stamp of the carcase (differentiate grade/age of the carcass)	2.86	3	1.363
4	I prefer readymade marinated or spiced beef	2.34	1	1.312

normally buy meat according to nutritional value on the pack. Another twenty eight percent was neutral to the nutritional value on the pack of meat. This shows that most consumers were not interested in the nutritional value on the label. Fifty percent of the respondents strongly agreed that they highly consider the shelf life of the meat pack when buying meat from the shopping centres. Again most the consumers were indifferent to roller stamps on the meat. When it came to purchasing marinated beef, more people strongly disagreed that they prefer readily marinated beef. The average score for the total questionnaire is 3.02, which indicates that the respondents do sometimes look at the technical specifications of the meat pack and sometimes they do no. this indicates that they are indifferent to technical specifications.

Table 4.3 Buying Habits

Fifty eight percent of the respondents strongly agreed (mode=5) with the statement of purchasing meat from a known retailer. Mostly all the respondents scored buying meat from a well-known supplier very high. The respondents showed neutrality on buying meat from

D	Buying Habits	Mean	Mode	Std Dev.
1	I buy meat from a known retailer	4.22	5	1.106
2	I prefer buying meat from supermarket to buying from independent butcheries	3.06	3	1.196
3	I prefer buying meat for immediate consumption to bulk buying	4.30	3	5.830
4	I prefer buying meat in a neat package from a well-known supplier	4.32	5	1.072
5	I know which cut to buy ensuring accurate cost effective decision	3.70	4	1.142

supermarkets to buying from independent butcheries as well as on the issue of buying meat using the price per kilogram as an indicator compared to bulk buying (mode=3). The general feel of buying meat in bulk was disagreed with. However, sixty percent of the consumers strongly agreed that they preferred neatly packed meat from known suppliers, whilst thirty four percent agreed that they knew which cut to buy.

Table 4.4 Important Purchasing Attributes to consumers

E	What is important to you as a consumer when purchasing meat?	Mean	Mode	Std Dev.
1	Price	4.38	5	.850
2	Brand name	3.24	4	1.401
3	Place of purchase	4.22	5	1.031
4	Freshness	4.80	5	.569

5	Packaging	4.18	5	1.019
6	Colour	4.22	5	.991
7	Readily marinated or spiced	2.62	1	1.376
8	Marbling (layering of fat and meat)	3.46	3	1.243

Price was seen as an important attribute by eighty six percent of the consumers (see appendix 2, table E1) of those, fifty eight percent (mode=5) strongly agreed. Fifty two percent of the respondents agreed that the brand name of beef was an important attribute as well, thirty two percent (mode=4) agreed and twenty percent strongly agreed. Place of purchase, freshness, packaging and colour were seen as very important attributes to consumers when purchasing meat. The mode of these questionnaires was 5, with all percentages and frequencies of agreeing with the importance thereof, well exceeding seventy percent. However, as with the technical evaluation of marinating in variable C4, consumers strongly disagreed that marinating was an important attribute when purchasing meat as shown by the modal value 1. Forty four percent of the respondents disagreed that either marinating or spicing was an important attribute in purchasing beef. Although thirty four (proportion of the modal value 3) of the consumers were neutral, to marbling of meat as an important attribute in beef purchasing, the greater proportion of consumers (fifty percent) agreed that marbling was an important attribute when purchasing beef. The total mean value of 3.89, shows that consumers were more inclined to agreeing that the above discussed variables were important in purchasing beef.

Table 4.5 Important Eating Attributes

F		**Mean**	**Mode**	**Std Dev.**
	How important are the following beef attributes when eating?			

1	Smell is important	4.62	5	.632
2	Tenderness is important	5.36	5	7.180
3	Flavour is important	4.40	5	.778
4	Juiciness is important	4.30	5	.905
5	Fat content is important	3.82	5	1.329
6	Leanness (less fat) is important	3.72	5	1.393
7	Texture is important	3.98	5	.953
	Total mean value	4.31		1.53

Consumers in the survey strongly agreed that smell, tenderness, flavour, juiciness, fat content, leanness and texture were all important attributes when eating beef. All the attributes in the table above had the "strongly agree" measure as the mode (value=5). The frequencies of agreeing with the importance of smell, tenderness, flavour, juiciness, fat content, leanness and texture when eating were 96%, 84%,92%, 84%, 62%, 68% and 68% respectively. Even the total mean value of 4.31 shows that the consumers fully agreed that the qualities discussed above were important eating qualities.

Table 4.6 Buying Intensions

G	Intension to buy for consumption	Mean	Mode	Std Dev.
1	I do not compromise the quality of the meat for quantity when having a braai	3.67	4	1.270
2	I buy meat in accordance to family preference	3.78	4	1.227
3	I normally read and evaluate meat advertisements critically and regularly	3.10	3	1.256

	Total mean value	3.51	1.250

Sixty percent of the consumers agreed that they do not compromise the quality of the meat for quantity when having a braai. They viewed quality as a better attribute to pay attention to as compared to quantity when having a braai. Seventy percent of the respondents were in agreement that they buy meat in accordance to family preference, twenty eight percent strongly agreed and thirty eight percent agreed. The consumers were split into a fifty-fifty situation when it came to reading and evaluating advertisements critically and regularly. The percentage of those who agreed was the same as that of those who disagreed (thirty six percent). This left those with the neutral opinion as the modal group, confirming that consumers do not really pay much attention to advertisements.

Table 4.7 Health consciousness

H	HEALTH CONSCIOUSNESS	Mean	Mode	Std Dev.
1	I do not compromise the quality of the meat I buy	3.73	5	1.328
2	I take time to choose meat carefully	4.10	5	1.106

The consumers proved to be health conscious, by strongly agreeing with the statements which showed the health consciousness. In all the statements the modal value was five. The mean value for all the statements was 4.01 which showed that the consumers were agreeable with

3	Eating healthy in terms of nutritional value displayed on the meat packaging can prolong life	4.04	5	1.082
4	I do not buy meat from the street or informal outlets	3.78	5	1.661
5	I prefer buying meat from a formal outlet	4.04	5	1.302
6	I buy neatly packed meat with labelling showing shelf life	4.34	5	.844

health awareness. For all the statements, the percentage of the respondents who agreed that they were health conscious was not less than seventy-two percent. The results show that over seventy-two percent, did not compromise on the quality of meat they bought, took their time to carefully select meat, believed that eating healthy in terms of nutritional value displayed on the meat packaging can prolong life, did not buy from informal outlets and valued neatness. Table 4.7 in the previous section reveals that the level consumers proved to be health conscious, by strongly agreeing with the statements which showed the health consciousness. In all the statements the consumers strongly agreed that they knew what healthy eating was. The mean value for all the statements was 4.01 which showed that the consumers were agreeable with health awareness. For all the statements, the percentage of the respondents who agreed that they were health conscious was not less than seventy two percent. The factor analysis drew a factor on information reliance, which was very significant in all clusters. This proves that consumers are aware of the importance of information. Consumers regard information provided to them by different sources as reliable. Some the sources include religious institutions like halal, butchers, government inspections, friends, family and media. To this effect Research Question 3 is answered by the results discussed here. Based on this discussion, we reject H_0 and accept the alternate hypothesis. *H_1: Consumers have* ***adequate information***

on health and marketing of beef and it is important to them. This conclusion shows that the third objective was met.

Table 4.8 Convenience

I	CONVENIENCE	Mean	Mode	Std Dev.
1	I buy whichever meat is available on the shelf	2.20	1	1.449
2	I only buy meat from a shop close by	2.00	1	1.189
3	I would not mind a longer distance to get quality meat	3.88	5	1.281
4	If meat is almost finished where I buy, I take whatever is on the shelf	2.10	2	1.087
5	I prefer to remove fat layers before eating prepared meat	3.40	5	1.407
6	I prefer to make a quick meal	3.02	3	1.400
	Total mean value	2.76		1.343

Convenience reflects a tendency to reduce the time and effort used to prepare and consume food. When the respondents were asked whether they buy whichever meat is available on the shelf, seventy percent disagreed with forty six of them saying they strongly disagreed. Taking whatever meat is available on the shelf was not seen as convenience neither was buying meat from shops that are close by only. The modal value for the respondents who claimed not to mind going an extra distance to get quality meat was 5, and the frequency sixty six. The respondents disagree with the statement that when the meat is almost finished they take whatever is on the shelf. Forty four percent of the consumers agreed that that they prefer to remove the fat layers before eating prepared meat. Consumers expressed neutrality to having preference for a quick meal. The total mean value reflects general disagreement with convenience factors.

Table 4.10 Safety perception

J	SAFETY PERCEPTION How helpful are the following attributes concerning safety?	Mean	Mode	Std Dev.
1	Freshness	4.72	5	.726
2	Country of origin	3.64	4	1.185
3	Name of producer	3.48	3	1.275
4	Place of purchase	4.26	5	1.041
	Total mean value	4.025		1.056

Ninety four percent of the respondents found freshness being a helpful attribute in perceiving safety. Consumers revealed that knowing the country of origin was quite helpful in safety perception of the beef they buy. Knowing the name of the producer was viewed by thirty percent of the consumers as a neutral attribute as far as the safety of beef is concerned. Fifty percent of the respondents viewed knowing the producer's name as either a helpful or very helpful attribute in determining the safety of the beef they bought. Eighty percent of the consumers were of the view that the place of purchase is also a useful factor in determining the safety of the beef they bought.

Table 4.11Risk Perception

K	Beef Risk Attitude	Mean	Mode	Std Dev.
1	I rarely think about safety when eating beef	2.74	2	1.284
2	To me, eating beef is worth the risk	2.72	2	1.349
3	I believe that government regulations ensure that unhealthy beef is not sold	3.42	4	1.257

4	I consider eating beef a health risk	4.18	5	2.590
	Total mean value	3.035		1.581

Consumers think about the safety of eating beef. Forty percent of the respondents disagreed with the statement that they rarely think about beef safety when consuming it. Fifty two percent of consumers did not think that eating beef is worth the risk. Forty eight percent of the respondents believed that the government keeps all the beef that is a risk to health off the market. Nonetheless they still believed that eating beef is risky as reflected by the eighty two percent who strongly agreed that they considered eating beef a health risk.

The way consumers perceive safety is influenced by different economic agents such as producers, processors, butchers, sales people in supermarkets and government regulators amongst others. These economic agents influence the consumer's safety perception through the assurance that they give on the safety of beef and its products.

Table 4.12 Influence on safety perception

L	**How much ability does each of the following parties have to influence and assure beef food safety?**	**Mean**	**Mode**	**Std Dev.**
1	Farmer/producer	4.71	5	1.184
2	Beef processor	4.28	5	1.379
3	Independent formal butcher	4.04	4	1.348
4	Supermarket butcher	4.12	5	1.357
5	Informal/ street butcher	3.43	6	1.969
6	Consumer/ home food preparer	3.86	3	1.349
7	Government regulators	4.66	5	1.148

From the statistics given in Table 4.12, it is evident that farmers, beef processors, butchers and meat inspectors give the consumers the most assurance that the products they are purchasing are safe. The general view from all those interviewed about formal authorities like meat inspectors, government inspectors producers and the regulatory bodies was that on the whole the beef market system worked well. Little faith was placed in consumers' ways of preparing beef and informal street vendors were completely discredited as zero percent of the respondents bought from them.

Table 4.13 Beef Safety Information

M	When you purchase beef to consume how much do you rely on each of the following for assessing food safety information /assurance?	Mean	Mode	Std Dev.
1	Price level	4.12	5	1.094
2	Brand name	4.02	4	1.231
3	Purchased from supermarket	3.90	4	1.124
4	Purchased from formal butchery	4.10	4	1.068
5	Expiry date	4.52	5	1.068
6	Labelled organic	3.82	3	1.388
7	Labelled natural	3.80	3	1.287
8	Government inspected	4.32	5	1.127
9	Nongovernmental organization approved	5.12	6	7.338

10	Religion approved (halal)	3.78	5	1.756
11	Product colour	4.34	5	1.265
12	Product smell	4.84	5	.581
13	Product texture	4.42	5	1.046
14	Traceable to farm	4.14	5	1.378

Table 4.13 shows that, factors such as price level, brand name, place of purchase (supermarket or formal butchery) and the expiry date are highly relied upon by consumers to assess beef safety and information assurance. Despite the fact that ninety four percent of the respondents were christians, religious approval for beef, was heavily relied upon by respondents as an indicator of safety. Intrinsic attributes such as the colour, texture and smell of beef were also associated by consumers with high levels of meat safety.

Table 4.14 Safety as per cooking location

N	How do you rank the food safety level of beef prepared at different locations?	Mean	Mode	Std Dev.
1	Home prepared by you	4.40	5	1.044
2	Home prepared by another	3.66	4	1.199
3	Supermarket deli	2.92	2	1.236
4	Tavern/bar by attendant	2.88	2	1.701
5	Expensive dine-in restaurant	3.52	3	1.521
6	Medium cost dine-in restaurant	3.30	3	1.547
7	Low-cost fast food place	3.20	2	1.752

The respondents ranked high safety to home prepared food only. The respondents viewed food from expensive and medium cost dine-in restaurants to be medium safe, whereas cooked beef purchased from supermarket delis, taverns and cheap restaurants was considered to be very unsafe. The place of cooking or preparing beef is thus a very important determinant in the safety of beef.

Table 4.15 Future Purchase

O	Future purchase	Mean	Mode	Std Dev.
1	I can recommend anyone to a butcher that serves good quality meat	4.30	5	.927
2	I can relate the price rate with the quality and size of the cut (value for money)	3.80	5	1.112

The future purchase of the meat question was rated as strongly agreed by the consumers. The two questions related to a consumer's ability to make a judgement of good meat quality after consuming and then make a future decision based on their experience. The real quality of the meat can be rated after consumption as shown by the consumers' responses in the table 4.15. The last question sought to capture the perception that consumers can make a quantitative as well as qualitative assessment of meat based on the previous purchase they made. The strong agreement (mode =5) in both questions shows that the consumers were convinced that they could make a good choice in recommending anyone to buy meat.

The reliability and internal consistency of the data is verified by means of Cronbach's coefficient alpha shown in table 4.16

Table 4.16 Reliability Statistics

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.758	.848	47

The Cronbach's Alpha (a coefficient of internal consistency value 0.758) shows that reliability of the data is high. The standardized Cronbach's Alpha of 0.848 indicates a higher reliability when the items are homogenous. A reason for such high coefficients could be that the analysis discarded a high number of responses from the initial data set (n=79, yet only forty seven items were used to calculate the Alpha coefficient) of items from the calculation.

4.2 Factor Analysis

To analyse the perceptions and attitudes of beef consumers, the respondents were asked to indicate their agreement or disagreement with forty seven statements or items whose Cronbach's Alpha based on standardized items is shown in Table 4.16. Respondents answered each item by choosing one of five alternatives in a Likert scale scored from1 (strongly disagree) to 5 (strongly agree). Other statements had a six scale Likert scale ranging from 1 (very low) through 5 (very high) to 6 (I do not know).

The statements used in the scale were mainly derived from the literature as alluded to in Chapter 3 and included both positive and negative items. The mean score, mode and standard deviation for each item are thoroughly presented in the previous section.

From tables 4.2 to 4.13 in the previous section, it is evident that consumers have varied perceptions and attitudes towards beef. Some have a positive image and others are not really concerned about quality, safety and the riskiness of beef. In some cases the consumers had a negative perception on the intrinsic and extrinsic values of beef. To find the correlations among the forty seven statements the items in the previous section were further analysed to explore

the existence of underlying dimensions of consumers' perceptions of beef with the aid of factor analysis.

The analysis was conducted using the procedure dimension reduction with SPSS. Owing to the 5 scaled and 6 scaled Likert scale differences, statements with different scales were analysed separately. This resulted in a preliminary analysis that employed all the attributes and generated a solution based upon the derivation of factors according to the eigenvalue criteria. However, the communalities for some of the items were judged to be quite low (<0.5) indicating that the set of derived factors explained a low proportion of the variance of those items. However, the statements with the low communalities were retained in the subsequent analysis for the strong positioning in the cluster analysis that followed. The final solution was derived on the basis of the direct oblimin with Kaizer normalization rotation, which generated a solution in five factors (Table 4.17).

Table 4.17 Factor Analysis

The results start with an extraction schedule (Table 4.17) which provides a solution for every possible number of factors every statement analysed (the number of cases). The statistics to focus on in every column are in bold as they are significant to that factor. Reading from the bottom upwards, Table 4.17 shows that every factor has a variance explaining it. For example Factor one explains 13.212 percent of the total variance in the data whereas Factor two explains 11.568 percent, together Factors one and two explain 24.780 percent of the variance in the data etc. The five factors explain approximately fifty five of total variance. With respect to the communalities, all the variables in the final model have communality greater than 0.40 that indicates the model explains a reasonable proportion of the variance in each variable. Analysis of the strength of the correlations between the factors and the statements provides further interpretation of the dimensions.

Statement	Component					
	1	2	3	4	5	communalities
C1	**.517**	-.340	-.111	.149	.303	.449
C2	**.714**	-.223	-.016	.023	.316	.683
C3	**.092**	-.254	-.257	**-.595**	.161	.402
C4	.421	-.347	.352	-.340	**-.056**	.402
D1	.432	.310	.048	**-.604**	-.111	.596
D2	**.493**	-.209	.242	.131	-.210	.243
D3	.050	.329	**.054**	.191	-.517	.263
D4	**-.072**	.385	.235	-.149	-.001	.168
D5	.384	**.424**	.206	-.240	-.129	.578
D6	.463	.508	.149	**-.074**	-.070	.684
E1	-.006	.257	.461	.213	**.077**	.364
E2	**.692**	-.280	.008	-.306	.046	.473
E3	**.521**	.270	-.214	-.332	.025	.458
E4	**.096**	.201	.308	.233	.092	.204
E5	.404	.391	.337	.165	**.078**	.484
E6	.361	.576	.176	.233	**.061**	.572
E7	.381	-.323	.320	-.244	-.253	.352
E8	.205	**.427**	.349	.011	.157	.429
F1	.235	.443	**.484**	-.019	-.204	.363
F2	.598	**.068**	.188	.031	-.411	.518
F3	**.421**	-.028	.305	.284	-.118	.400
F4	.187	.259	.246	-.035	.291	.441
F5	**.080**	.055	.418	-.551	.187	.626
F6	.436	-.294	**-.085**	-.259	-.216	.586
F7	.654	.100	.041	**.097**	-.121	.618
G1	.431	**-.063**	.040	.223	.222	.464
G2	.480	-.322	**.071**	-.567	.204	.557
G3	.538	-.295	.262	.305	**.074**	.740
H1	.519	-.328	.129	**-.062**	.175	.527
H2	.605	-.137	.164	.394	**-.071**	.653
H3	.509	-.060	.127	.551	-.142	.450
H4	.256	.303	**-.099**	-.350	-.236	.476
H5	.180	.163	.041	-.396	**.527**	.512
H6	**.729**	.340	-.121	-.031	.209	.697
I1	-.493	-.113	.477	**.088**	.083	.441
I2	-.332	-.383	.467	.286	.219	.652
I4	**.458**	.163	-.090	-.013	-.196	.552
I5	-.391	-.224	**.679**	-.026	.065	.522
I6	-.214	-.299	**.618**	.032	-.154	.494
I8	**.072**	-.196	-.095	.006	.225	.498
I9	.466	-.357	.116	**.070**	-.119	.445

I10	.242	**.441**	-.056	.356	.221	.555
I11	**.618**	-.046	-.311	**-.091**	-.123	.499
I12	**.609**	-.219	-.105	.157	-.121	.434
I13	.270	-.405	-.321	.213	-.295	.411
I14	-.034	-.430	**.534**	-.292	**.050**	.562
O1	.352	.254	-.156	.341	**.500**	.577
O2	**.475**	-.216	-.091	.377	.109	.461
Eigenvalue	2.228	2.369	1.654	1.454	1.336	
Variance %	13.212	11.568	11.325	10.670	8.258	
Cumulative variance %	13.212	24.780	36.105	46.775	55.033	

Extraction Method: Principal Component Analysis.
6 components extracted.

Variable	**Factor 1: Information reliance & quality indication**	**Factor 2: convenience**	**Factor 3: Traceability and animal welfare**	**Factor 4: Health and safety Conscious**	**Factor 5: Price and Branding**
G3	.693			.449	
O2					.689
C2	.666		.542		
C1	.647				
H2	.644			.523	
H3	.625				
H1	.511			.497	
C3	.494				
G1	.462				
D2	.452				
F7	.439			.436	
I13	.433				
D4					
I5		.783			

I6		.738			
I2		.709			
I1		.663			
I14		.565	.481		
O1	.404	-.428			
J2			.724		
J3			.672		
M14			.618		
J4			.496		
D3			.657		
D6			.525	.820	
D5				.741	
I4				.583	
H6		-.535		.580	.717
E1					.661
E2					.593
M1					.584
M2					.774

Table 4.18 Factor Scores: Correlations between observed variables and extracted factors

***Factor scores >0.4 are reported here, which include 32 of the 47 observable variables.**

Table 4.18 is simply a recreation of Table 4.17 obtained by rewriting the factor loadings. In table 4.18 each factor is given a name based on the values on the significant loadings greater than 0.40 as suggested by Burns and Burns (2008). Table 4.18 (not provided on SPSS) makes it easier to see the distinctions in the factors. Each column has a title that enables derived from the loadings

The factor analysis model summarized in table 4.18 reports the rotated factor matrix for N = 100 sample with forty seven observable variables. The principal components method and oblimin rotation were used with SPSS 21.0 to generate latent factors. Guttman's eigenvalue 1 criterion (eigenvalues >1) and a scree plot were used to determine the number of factors. The final solution was derived using the eigenvalue criteria (value ≥ 1) and generated five factors (Table 4.18).Table 4.18 presents rotated factor matrix, including observed variables that are

correlated (absolute correlations that are greater than 0.40) with the five rotated factors. The five factors explained fifty five percent of the total variance in the sample data.

Factor 1 {strongly correlated with the statements G3 (meticulous advert reader), C2 (shelf life consideration), C1 (checking labelling on meat), H2 (careful choosers), H3 (relates health to nutritional value pack), H1 (uncompromising on quality), C3 (checking roller stamps), G1 (no compromise on quality of braai meat) and D2 (supermarket referrer)}, is named as the Information reliance & quality indication factor.

Factor 2 {strongly associated with statements I5 (takes whatever is on the shelf if there is no choice), I6 (only buys from nearby places), I14 (prefers a quick meal), and I1 (not picky, takes whatever is available on shelves)}, is named "convenience".

Factor 3 is extracted from the variables J2 (country of origin), J3 (name of producer), M14 (traceable to farm) and thus it is termed "traceability and animal welfare".

Statements C3 (checking roller stamps), D1 (buys from known retailer), D5 (considers neatness and credibility of supplier), I4 (does not mind going longer distances), and H6 (considers shelf life on package) with strong associations with factor 4 "Health and safety conscious", so this factor is named after it.

Factor 5 has strong associations mainly with the statements about the price and branding O2 (can relate price rate to quantity), H6 (labelling is important), E1 (beef prices are generally important when buying), E2 (beef brands are important generally), M1 (takes price as a safety indicator), and M2 (takes the brand as a safety indicator) and is named "price and branding". With regards to the factor analysis of the attribute "sensory" was excluded from the final analysis because its communality in the initial solution was judged to be quite low.

4.3 Beef Market Segmentation

The factor analysis model above reduced the original data set to five important factors, which can be used to improve the image of the beef products and the marketing thereof. The third part of this chapter segments consumers into homogenous subgroups using cluster analysis.

In order to explore the existence of sub-groups of beef consumers on the basis of their perceptions and beliefs, the data was analysed by using cluster analysis of the factor scores generated by the first factor model presented in the previous section 4.2. The analysis clustered beef consumers into four groups on the basis of their five factor scores. Table 4.19 below presents a condensed summary of the cluster analysis based on some demographic characteristics.

Table 4.19 Cluster Profile Summary

According to Hair *et al* (1998), profiling the clusters is the way of considering the practical significance of the clusters in meeting the objectives of marketing segmentation. A profile of each of the four groups is established from the average factor scores for each group and from the identification of demographic, behavioural, and perception variables for which there are significant differences between groups on the basis of a chi-square contingency test at a five percent level of significance. Pseudo F tests were used for the fusion of clusters. The criteria performed well in the given study's data set, though with a high degree of error. The observed

significance levels are not corrected for this and thus cannot be interpreted as tests of the

Segment 1: Informed buyers	**Segment 2: Elite buyers**	**Segment 3: Health & safety conscious buyers**	**Segment 4: Apathetic buyers**
Read adverts critically	Pay higher for quality	Pay higher for safety	Prefer cheaper beef
Are particular about packaging	Trust labelling	Concerned about traceability and animal welfare	Buy whatever is there
Trust labelling	Highest demand for quality	Consider excessive beef consumption a health risk	Mind going longer distances
High demand for quality	Do not mind long distances when buying	Believe the government is the biggest player in ensuring beef safety	Prefer buying from somewhere near
High knowledge about labelling		Attentive to expiry dates	Do not pay attention to labelling
		Take time to prepare beef	Prefer quick meals

hypothesis that the cluster means are equal. The pseudo *F* statistic transformed into a

pseudo t^2 statistic, and the cubic clustering criterion. The pseudo F statistic was applied to a hierarchical clustering method producing p values of 0.00.

Table 4.20 presents a summary of the cluster centres and one-way tests for the difference between cluster centres. The results indicate that these five factors have significantly different patterns in differentiating between groups, consequently the criteria used to cluster the beef consumers (the factors) can be considered meaningful. The statistics of the clusters are summarized in Table 4.20. With reference to Table 4.20, the largest cluster was Cluster 4

The next step in the analysis was to profile the clusters.

Tables 4.20 a & b- Analysis of beef consumers clusters

a) Final Cluster Centres

	Cluster			
	1: Informed buyers	2: Elite buyers	3: Health & safety conscious buyers	4: Apathetic buyers
Factor 1: Information reliance & quality indication	0.39147	0.89036	0.65642	-0.39103
Factor 2: convenience	0.12449	-0.72326	-0.03922	0.424815
Factor 3: Traceability and animal Welfare	-0.65572	-.027698	0.24564	-0.48015

Factor 4: Health and safety Conscious	-0.30177	-.078264	0.58886	-0.32777
Factor 5: Price and Branding	-0.14579	-0.53167	-0.99558	0.53252

In this study, several socioeconomic variables were used to generate demographic characteristics for four consumer segments. Income, decision maker, household size, source of income, level of education and age were the key demographic variables explaining segmental distinctions, while other demographic variables were found to be consistent across segments. The results were as expected and in with line literature (Ness, 2002; Kim and Boyd, 2004, Labuschagne *et al* 2010) showing that normally there are distinctions in beef markets. The

b) Significance tests for differences between clusters

	Cluster		**Error**		F	Sig.
	Mean Square	df	Mean Square	df		
Factor 1: Information reliance & quality indication	11.675	3	.480	92	24.339	.000
Factor 2: convenience	16.005	3	.546	92	29.321	.000
Factor 3: Traceability and animal welfare	20.642	3	.383	92	53.911	.000
Factor 4:Health and safety Conscious	14.553	3	.558	92	26.079	.000
Factor 5: Price and Branding	21.811	3	.321	92	67.868	.000

results presented show that four clusters of beef consumers were identified in the Alice market thus answering the research question - *What market segments exist among beef consumers in the Alice beef market?* Based on the finding that addresses the research question, we reject the null hypothesis and accept the alternate hypothesis - *H_1: There are significant market segments*

in the Alice beef market since there are four significant consumer segments in the Alice beef market.

Table 4.21 Cluster demographic characteristics

	Segment 1: Informed buyers	Segment 2: Elite buyers	Segment 3: Health & safety conscious buyers	Segment 4: Apathetic buyers
Month income				
< R2500	1.61	0.59	9.38	49.46
R2 500- R5 000	8.55	10.23	21.88	26.88
R5100- R10 000	38.58	15.01	30.10	16.3

R10100-R20000	42.11	26.56	25.65	1.08
Over R 20 000	17.11	47.61	12.99	
Buying decision maker				
Breadwinner	48.37	29.97	36.35	44.57
Spouse	37.25	30.13	40.10	8.7
Children	6.54	2.51	4.91	
Myself	5.23	31.03	14.25	40.22
Others	2.61	7.36	4.09	2.17
Household size				
1	9.7	3.13	10.09	7.69
2	10.29	7.81	6.05	23.08
3	13.33	25.00	25.25	9.89
4	18.66	9.38	19.7	9.34
5	20.92	4.56	20.10	20.17
6+	28.6	50.13	18.81	30.17
Source of Income				
Employed	51.30	48.44	55.13	23.23
Part-time job	18.69	18.00	10.01	24.47
Bursary	18.57	22.87	28.63	22.83
Social grant	11.44	10.69	6.24	29.47
Age				
Under 20 years	8.55	15.9		1.32
20 to 29 years	48.26	18.3	48.26	8.26
30 to39 years	20.59	29.9	20.59	13.55
40 to 49 years	36.50	12.50	36.50	16.41
Over 50 years	7.25	10.25	7.25	51.20
Education level				
High school	51.95	25.68	9.17	46.24
Tertiary	36.36	36.47	60.94	41.94
Post graduate	11.69	37.85	29.89	11.83

The results in Table 2.21 show that Informed Buyers (cluster 1) and the Elite Buyers (cluster 2) had higher level of monthly income compared to consumers in other market segments; 42.1% of the Informed Buyers and 26.56% of the Elite Buyers had monthly income of R10 100 - R20 000. In the same income category the Health and Safety conscious Buyers had 25.65% whilst the apathetic buyers earning the same amount were 1.08%. 47.6% of the Elite Buyers earned over R20 000 per month whilst 17% of the Informed Buyers and 13% of the Health and Safety conscious Buyers had a monthly income over R20 000 respectively. No one in the Apathetic Cluster earned more than R20 000.

This result shows that income level is an imperative socioeconomic factor that affects Alice consumers' choice of beef. The other demographic factors and their percentages in the clusters presented in Table 4.19 can be interpreted the same way.

Cluster 1 (information reliant consumers) has twenty two percent of the beef consumers, who can find and know what they will be looking for when they are buying beef; Factor 2 has the most negative value in this cluster (Table 4.20). These consumers are concerned about the quality and safety of beef (Factor 1), and they do not mind paying higher prices for proper labelling (Factor 5). Cluster 1 represents a group of consumers who are more knowledgeable about beef healthiness and quality; they tend to have a bigger degree of awareness about labels and the different brands. These consumers are characterised by higher education levels and live predominantly in urban areas. About ninety one percent of the consumers in this cluster are female. The consumers in this cluster earn a monthly income above R20 000, they eat beef at least once a week and always buy it from formal butcheries. This may be attributed to their

reliance on information. It can be concluded that butcheries are considered the best place to buy healthy beef.

Cluster 2 is the second biggest segment, with twenty seven percent of the total number of consumers. Consumers in this segment were classified as "elite" as they are the most frequent purchasers of prime beef. The average age of consumers in this cluster is 28.1 years. All of the consumers in this cluster are formally employed and are earning more than R20 000 per month which contributes to their being called elite. Seventy seven percent of the consumers in this cluster prefer to buy beef straight from formal butcheries. They are heavier consumers of beef compared to the consumers in the other clusters; fifty two percent of them eat beef at least three times a week and they tend to eat it, at home and in restaurants. This segment of beef consumers is also health conscious and trust labelling packaging as well as branding. Consumers in Cluster 2 tend to buy beef more in butcheries and do not mind going long distances to buy quality beef.

Cluster 3 consumers that represent twenty two percent of the total beef consumers and have strong perceptions of the healthiness and safety of consuming beef. These consumers tend to have higher scores in factors 1 (information reliance & quality indication) and 4 (quality, health and safety conscious) which implies that they think beef quality is indicated by information on labelling and quality beef is healthy and safe to consume. Cluster 3 consumers associate health with quality and safety; consumers in this cluster tend to have the highest scores in Factor 4. Cluster 3 consumers are characterised by high levels of education and eighty one percent of them live in urban areas. They are the lighter consumers of beef who insist that it is safer to buy beef from known butchers in formal butcheries. They eat beef lesser than consumers in other clusters predominantly at home and up market restaurants. Cluster 3 consumers are more aware of labels and different brands in the market than consumers in other clusters. Finally

consumers in this cluster are highly concerned about the origins of the beef they eat and how the animals were treated as shown by the very high score in factor 3 in Table 4.19.

Cluster 4 is the biggest segment, with twenty seven percent of the total number of consumers. Consumers in this segment were classified as "apathetic". The average age of consumers in this cluster is 29.07 years. Fifty one percent of the consumers in this cluster are formally employed and are earning less than R2500 per month. They are also heavy consumers of beef with 41.1% of them eating beef at least three times a week. They have big families as summarised in Table 4.19. Cluster 4 consumers do not make any critical evaluations of beef like consumers in other clusters. Consumers in Cluster 4 are of the opinion that information on packaging, newspapers, and other forms of media is not important when it comes to buying beef. They think beef is better off unbranded so that it remains cheaper. The consumers in this cluster rely on the sensory attributes of beef more than any other attribute. They are also of the opinion that beef is more expensive because of labelling and place of purchase as such they are somehow price conscious consumers. Cluster 4 consumers tend to have the smallest degree of awareness about beef brands, safety and healthiness as they are characterised by lower education levels. Cluster 4 identifies more with Factor 2 (convenience) and Factor 5 (price and branding).

4.4 Summary

The profiles are based on data collected from the respondents as discussed in the previous chapter. The presentation of the descriptive and empirical results was divided in three parts. First the findings related to beef consumers behaviour and preferences were presented. Afterwards the discussion focuses on consumers' perceptions and beliefs on beef and in the factor analysis of those perceptions. Finally an identification of beef consumers segments on the basis of perceptions was done. In conclusion, the differences among the clusters are

stronger on the first, third, and fifth dimension. The chapter presented empirical research findings from the data analysis. Descriptive statistics and factor as well as cluster analysis models were used to achieve the presentation of results as is in this chapter.

CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

This chapter draws a summary of the research findings and conclusions based on results of the study. Furthermore, recommendations are brought forward on how best to satisfy the beef consumer as well as improve the beef market based on the perceptions of the consumers.

The data provided by one hundred interviewed beef shoppers in Alice provided some insights to a better understanding of consumers' inclinations for beef products. Four areas of focus were

raised as per the research objectives. Out of the four focus areas, the results presented explored two major issues that can affect future direction of beef marketing in Alice. The first was to gauge factors that are considered to be important in Alice consumers' beef purchase decision-making with factor analysis. The findings support the appreciation of the aspects of beef attributes that need to be emphasized in order to improve beef marketing.

The second issue was to determine market segments that could effectively respond to different marketing strategies. The literature review for this project articulated that the beef market is heterogeneous and consists of many market segments. Cluster analysis was used to categorize consumers into homogeneous subgroups for the Alice market. The research consisted of questions that probed for consumer perceptions from farm to fork as far as beef was concerned. The results prove that the consumers had opinions and perceptions on the whole supply chain as it were.

The main objective of this research was to understand how beef consumers make choices and how their consumption intensions with respect to beef are derived so as to determine the possible implications on the marketing channels (formal and informal). The results reveal that five factors were identified as the main influences in the formation of perceptions thus influencing beef purchasing patterns. The factors identified are - Factor 1: Information reliance & quality indication; Factor 2: convenience; Factor 3: Traceability and animal welfare; Factor 4: Quality, health and safety Conscious and Factor 5: Price and Branding.

The consumer profile of beef in Alice Town has, in its majority, between 20 and 30 years of age, with an average household size of five, high degree of formal education and household income surpassing R1500 per month. It was observed that the larger, the economic power of the consumer, the greater their preference were for practicalities.

Interviewees, in a general analysis, give greater importance to the before purchasing evaluation of intrinsic beef attributes when eating or sensorial characteristics (flavor, odor, texture, and appearance), sanitary aspects of the product as shown by the place of purchase. Moreover they placed higher importance on attributes such convenience, label information assessment, brand of the product, origin and monitoring of animal welfare.

5.2 Recommendations

It is recommended that suppliers of beef should take a holistic approach in trying to satisfy the consumer. Evidently the starting point of a successful supply chain is the customer.

To a major extent there is no concern from consumers in relation to guarantees about the beef that they buy. This complements empowerment in information and awareness consumers have about the guarantees that can be offered by the existing quality-control schemes. Information about procedures for certification would be a crucial element when promoting demand for premium meat. This is because of the importance set by consumers on monitoring and control systems as mechanisms for guaranteeing quality. For this purpose, co-ordination and co-operation between public bodies and the economic agents involved might result in favourable promotion of this economic activity. The role of government in ensuring protection for the consumer through relevant regulations should also be clear and visible to consumers.

In the light of these measures special consideration has to be paid to the Health and safety Conscious Buyers, the Traceability and animal welfare Buyers and the Information reliant and & quality Shoppers. These clusters represent a potential for market growth and specific-marketing strategies should be addressed to them. An essential mission for beef marketers is to increase consumers' knowledge on the attributes encompassed in these factors since the knowledge level was found to be relatively low among consumers in the apathetic cluster.

The results show that extrinsic non-economic factors such as healthiness, traceability and animal welfare have become crucially important to the beef consumer especially the educated ones. It is recommended that producers and marketers of beef have an important role to play in reconciling the costs they bear, the information they provide to consumers, their marketing strategies and the prices they charge the consumers. Highlighting to consumers on the importance of aspects such as feeding and breeding systems by means of campaigns for information and promotion, so as to allow them to become familiar with the relationship between the aspects listed and the final quality of the product is equally crucial.

As noted in the literature review, power has shifted from the supply side to the consumer. The suppliers and retailers like butchers should rigorously advertise differentiated beef cuts and products to the apathetic consumers. This cluster represents a significant percentage of the beef market, instead of selling whatever is left the marketers can try and make their products more appealing to this cluster. Similarly, greater awareness is needed on the part of consumers, so that they can adopt responsible purchasing habits, such as reading the label carefully, or overcome the barrier implied by purchasing pre-packaged products.

The results also show that 61% of the consumers in the Informed Buyers, Elite Buyers and the Health and Safety Conscious Buyers clusters (1, 2 and 3) are empowered with greater knowledge and purchasing power. These consumers, particularly the Informed and Elite Buyers demand the highest quality of beef and the accompanying information. In addition to this, the needs of these consumers are constantly changing. It is not alarming to see that those consumers of premium-quality meat do not make purchases in supermarkets, are strongly opposed to buying pre-packaged meat and would not mind travelling longer distances to get the butchery of their choice and ultimately the choicest meat quality. Marketers should focus on such consumers such consumers because the beef value chain is demand-driven plus there

are opportunities for delivering increased customer value and satisfaction though market segmentation and price differentiation.

It was discovered that beef consumers did not consider either intrinsic or extrinsic cues in isolation when purchasing beef but rather all characteristics contribute to the final perception. The results presented in cluster analysis reveal that the concept of perceived quality is not simple. The clusters that emerged show us that quality is a subjective concept that is informed by a consumer's personal taste and preferences. Taste and preferences inform the consumer's effective demand which in retrospect is informed by the consumer's socio-economic status. As such it was discovered that consumers, satisfaction comes from what they were looking for in the first place. The presence of market segments in the Alice beef market in comes from a premise that, "*there exists a relation between perceived quality, value, and price and customer satisfaction*."

5.3 Further research directions

Improved knowledge of the relationship between consumers' beef selection and socio-demographic factors affect their perceptions and ultimately the market thereof. Based on these producers, distributors, marketing staff and policy makers can improve their product quality and marketing plans in order to increase consumer confidence toward beef quality and simultaneously increase meat consumption.

In spite of the ever-growing dominance of supermarkets in beef markets consumers still prefer to buy beef, in the butchers, mainly, because they trust the butcher and because of the quality of the products. Consumers buy in supermarkets mainly for convenience and price.

The empirical results from the factor analysis and cluster analysis suggest that Alice consumers have different beef taste and preferences. The different perceptions on beef products and their

marketing are evident in the presence of the different market segments. Results suggest a number of recommendations to beef producers and policy makers of the South African beef marketing system. Generally, results of factor analysis indicate convenience together with price and branding of beef were found to be the most important factors affecting Alice consumers' beef purchase choice. Other factors were also determined as important groupings of beef attributes for Alice consumers' beef purchase decision. Thus, policy makers and beef marketers should enhance these aspects of beef attributes in developing policy and marketing strategies of beef.

Findings of cluster analysis provide detailed information on subgroups of Alice consumers, which can be used to determine current status of South African beef consumers' preference for beef. However, it is clear that consumer concerns are not always reflected in their purchasing decisions. This means that a more in-depth study of the factors that explain their conduct will be needed in future research.

To most consumers, quality is more associated with the extrinsic attributes related to value addition, information displayed, health and safety than with the sensory and intrinsic attributes. This result can inform producers to improve the positioning of their products in the market in a time where the main the main drivers are precisely consumer perceptions. Most solutions and opportunities in the beef industry can only be successfully addressed through a means end chain approach as the consumers have the final say. Supply chain as well as value chain partnerships and alliances are the second prerequisite for successful beef marketing. Consumer perceptions ultimately affect all that involved in the final beef product, thus the commercial sector has to have a good idea of its customers' needs. Consumer confidence in beef can be increased through good management practices from farm to fork, which includes animal handling before

and after slaughter, meat quality, quality control, promotion and presentation of a healthy product, reasonable prices and knowledge transfer of how to use the product.

This study reveals a detailed profile of the beef consumer and their behaviour. It identifies the most important attributes used by consumers to evaluate and to buy beef. The study also provides some insight into the perceptions of beef consumers. Furthermore, it has shown that the attributes reveal a hierarchy of underlying dimensions from which to understand consumers' perceptions of beef which form a basis for market segmentation.

Policy makers and marketers would need to emphasize reliability of the marketing system of beef based on consumer perceptions and beliefs. The findings also suggest that Alice consumer demand for beef is segmented by key beef attributes and by socioeconomic factors, which implies the importance of niche marketing on identifiable sub-groups of the consumers. The information generated from this study should enhance the marketing ability of meat producers, processors, wholesalers, and retailers by providing some bases for market segmentation and developing niche markets for different types of meats.

A few areas for further study were identified. The beef market in its entity is not homogeneous. Further studies into the needs and preferences of beef consumers on a provincial if not national scale will be valuable. A study of the developing prime beef market could help in better understanding the emerging sector. This knowledge would enable the industry to better assist with the development of the beef industry as a whole and in bringing their cattle into commercial marketing channels. Research is required into the future potential of communications, labelling and traceability as vehicles for consumer reassurance, and further research on the relationship between changing consumer behaviour and meat consumption patterns could provide additional valuable insights into new business opportunities.

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Appendix A: English Version of the Survey Questionnaire

CONSUMER PERCEPTIONS AND VALUES ON BEEF QUALITY

The following questions are specifically directed to people who eat beef. The information required is on individuals or households that consume beef as part of their diets. This questionnaire is for academic purposes only. There are no direct benefits that one will get from participating in this interview. This is not a government health department project, nor is it affiliated to any known governmental and non-governmental projects. It a Master of Science in Agricultural Economics project privately and personally funded by Mr. S Mabhera a student of University of Fort Hare. This project does not reflect the views or ideologies of the University of Fort Hare.

You have every right to agree or refuse to be a part of this research. You will not be required to disclose your personal identity and your contact details. The information you provide will be used for academic purposes and maybe in policy recommendations to the meat industry only.

This interview will take 20-30minutes of your time.

Thank you.

Name of Enumerator	
Place	
Date	
Questionnaire number	

The completion of this questionnaire will signify your consent or willingness to participate in this survey. May you please sign below to show your voluntary cooperation?

Signature _____

Date _____

Thank you.

A. SOCIO-DEMOGRAPHICS

1. Socio-demographics

Variable	**Response**	
Age		
Marital status		
Religion		
Ethnicity		
Gender	Male	Female
Place of residence	Urban	Rural

1. How many people live in your household?.....
2. How many people eat beef in your family.....
3. How many people normally cook?.....
4. Of the people who eat beef in your household, what is the age of

i. The oldest;.....

ii. The youngest; .....

iii. The people who normally cook; .....

5. Employment status

Occupation (Please mark with X)	Number in your household	Income class (choose a class from the table below)
Part-time job		
Social grant		
Pensioner		
Student (bursary)		
Employed		

Income class	A	B	C	D
Income bracket (R/month)	2000 and less	2100-5000	5100-10 000	10 000+

Exact amount R..... (if you do not mind)

6. What is the highest level of education in your household? (please mark with an X)

Primary	Secondary	Diploma	Degree	Honours	Masters	PhD

B. CONSUMER SHOPPING PATTERNS AND HABBITS

7. Where do you prefer to buy beef?

Formal butchery=1 ☐ Supermarket=2 ☐

Street vendor =3 ☐ Abattoir (place were cows are slaughtered) =4 ☐

Other (specify).....

8. How frequently do you typically consume beef in any meal at home and away from home?

Once a month	2-3times a month	Once a week	2-3times a week	4 or more times a week

9. On a scale of zero to ten how often do you buy the following listed beef meats whether they are fresh or frozen? (Please circle).

Meat Type	Frequency of buying per year
Special cuts (e.g. T-Bone, sirloin, top side,)	0-1-2-3-4-5-6-7-8-9-10
Pre-packed or weighed steak	0-1-2-3-4-5-6-7-8-9-10
Organ meats (heart, kidney, tongue...)	0-1-2-3-4-5-6-7-8-9-10
Offal / Tripe (intestines...)	0-1-2-3-4-5-6-7-8-9-10
Sausage/ wors	0-1-2-3-4-5-6-7-8-9-10
Head and cow legs	0-1-2-3-4-5-6-7-8-9-10
Soup bones	0-1-2-3-4-5-6-7-8-9-10

10. Who makes the choice of what meat type to buy?

.....

11. Who makes the choice of what meat cuts to buy?

.....

12. How do you normally prefer the beef steak?

i) Stewed

ii) Fried

iii) Grilled/ Braiied/ Roasted

13. How frequently do you typically eat out or get take out / carry out at a restaurant or food service establishment (e.g. supermarket deli, caravan fast foods, braii at a tavern or meat shop) for each of the following meals in a month?

_____times per month for breakfast

_____times per month for lunch

_____times per month for dinner

14. Over the past years, have you ever lowered your beef consumption because of food safety concerns?

a. No

b. Yes, If yes, reduced by roughly _____% (please give your best estimate)

15. Have you or anyone in your family ever been sick where you suspected the illness was caused by eating spoiled, tainted, or improperly cooked or handled beef?

a. No b. Yes

If yes, was the food prepared at:

___home

___away from home (e.g., food service)

___some at home and some away from home

The following section is comprised of multiple choice answers. Please **tick one** response of your choice from one to five.

E	**WHAT IS IMPORTANT TO YOU AS A CONSUMER WHEN PURCHASING MEAT?**					
	EVALUATION STATEMENT	**Strongly Disagree =1**	**Disagree =2**	**Neutral =3**	**Agree =4**	**Strongly agree =5**
1	Price	1	2	3	4	5
2	Brand name	1	2	3	4	5
3	Place of purchase	1	2	3	4	5
4	Freshness	1	2	3	4	5
5	Packaging	1	2	3	4	5
6	Colour	1	2	3	4	5
7	Readily marinated or spiced	1	2	3	4	5
8	Marbling (layering of fat and meat)	1	2	3	4	5

F	**IMPORTANCE OF EATING QUALITY ATTRIBUTES.** **How important are the following beef attributes when eating?**					
1	Smell is important	1	2	3	4	5
2	Tenderness is important	1	2	3	4	5
3	Flavour is important	1	2	3	4	5

	EVALUATION STATEMENT	Strongly Disagree =1	Disagree =2	Neutral =3	Agree =4	Strongly agree =5
	Before Purchasing Evaluation					
C	**TECHNICAL MEAT SPECIFICATIONS**					
1	I normally buy meat according to nutritional value on the pack	1	2	3	4	5
2	I highly consider the shelf life of the meat pack when buying meat from the shopping centres	1	2	3	4	5
3	I normally look out for the roller stamp of the carcase (differentiate grade/age of the carcass)	1	2	3	4	5
4	I prefer readymade marinated or spiced beef	1	2	3	4	5
D	**EXTRINSIC ATTRIBUTES**					
1	I buy meat from a known Retailer	1	2	3	4	5
2	I prefer buying meat from supermarket to buying from independent butcheries	1	2	3	4	5
3	I prefer buying meat on R/kg to bulk buying	1	2	3	4	5
4	I prefer buying meat in bulk than in R/kg	1	2	3	4	5
5	I prefer buying meat in a neat package from a well known supplier	1	2	3	4	5
6	I know which cut to buy ensuring accurate cost effective decision	1	2	3	4	5
4	Juiciness is important	1	2	3	4	5
5	Fat content is important	1	2	3	4	5
6	Leanness (less fat) is important	1	2	3	4	5
7	Texture is important	1	2	3	4	5
G	**INTENSION TO BUY FOR CONSUMPTION**					
1	I don't compromise the quality of the meat for quality when having a braai	1	2	3	4	5
2	I buy meat in accordance to family preference	1	2	3	4	5
3	I normally read and evaluate meat advertisements critically and regularly	1	2	3	4	5
H	**HEALTH CONSCIOUS**					
1	I don't compromise the quality of the meat I buy	1	2	3	4	5
2	I take time to choose meat carefully	1	2	3	4	5

3	Eating healthy in terms of nutritional value displayed on the meat packaging can prolong life	1	2	3	4	5
4	I don't buy meat from the street or informal outlets	1	2	3	4	5
5	I prefer buying meat from a formal outlet	1	2	3	4	5
6	I buy neatly packed meat with labelling showing shelf life	1	2	3	4	5
I	**CONVENIENCE**					
1	I buy whichever meat is available on the shelf	1	2	3	4	5
2	I only buy meat from a shop close by	1	2	3	4	5
4	I would not mind a longer distance to get quality meat	1	2	3	4	5
5	If meat is almost finished where I buy, i take whatever is on the shelf	1	2	3	4	5
6	I only buy meat from nearby places, whether formal or informal	1	2	3	4	5
8	I can compare between superior and inferior meat quality after eating	1	2	3	4	5
9	Packaging of raw meat is important to me	1	2	3	4	5
10	When buying meat in bulk I set the freezer temperature according to the recommended settings	1	2	3	4	5
11	I prefer buying known brands of meat	1	2	3	4	5
12	I prefer knowing the origin of the meat before buying it	1	2	3	4	5
13	I prefer to remove fat layers before eating prepared meat	1	2	3	4	5
14	I prefer to make a quick meal	1	2	3	4	5

J	**SAFETY PERCEPTION** **How helpful are the following attributes concerning safety?**					
		not helpful at all =1	**not very helpful =2**	**Indifferent =3**	**quite helpful =4**	**very helpful =5**
1	Freshness	1	2	3	4	5
2	Country of origin	1	2	3	4	5
3	Name of producer	1	2	3	4	5
4	Place of purchase	1	2	3	4	5

K	Beef Risk Attitude	Strongly Disagree =1	Disagree =2	Neutral =3	Agree =4	Strongly agree =5
1	I rarely think about safety when eating beef	1	2	3	4	5
2	To me, eating beef is worth the risk	1	2	3	4	5
3	I believe that government regulations ensure that health risk beef is not sold	1	2	3	4	5
4	Beef risk assessment:	1	2	3	4	5
5	I consider eating beef a health risk	not risky at all 1- 2- 3- 4- 5- 6- 7- 8- 9 highly risky				

How much ability does each of the following parties have to influence and assure beef food safety?							
L		**Ability to assure beef food safety**					
	Responsible party	Very low =1	Low =2	Moderate =3	High =4	Very high =5	I don't know=6
1	Farmer/producer	1	2	3	4	5	6
2	Beef processor	1	2	3	4	5	6
3	Independent formal butcher	1	2	3	4	5	6
4	Supermarket butcher	1	2	3	4	5	6
5	Informal/ street butcher	1	2	3	4	5	6
6	Consumer/ home food preparer	1	2	3	4	5	6
7	Government regulators	1	2	3	4	5	6

	When you purchase beef to consume how much do you rely on each of the following for assessing food safety information /assurance?						
M		**Level relied on for food safety Assurance**					
	Product attribute	**Very low =1**	**Low =2**	**Moderate =3**	**High =4**	**Very high =5**	**I don't know=6**
	Price level	1	2	3	4	5	6
	Brand name	1	2	3	4	5	6
	Purchased from supermarket	1	2	3	4	5	6
	Purchased from formal butchery	1	2	3	4	5	6
	Expiry date	1	2	3	4	5	6
	Labelled organic	1	2	3	4	5	6
	Labelled natural	1	2	3	4	5	6
	Government inspected	1	2	3	4	5	6
	Nongovernmental organization approved	1	2	3	4	5	6
	Religion approved e.g. halaal	1	2	3	4	5	6
	Product colour	1	2	3	4	5	6
	Product smell	1	2	3	4	5	6
	Product texture	1	2	3	4	5	6
	Traceable to farm	1	2	3	4	5	6

	HOW DO YOU RANK THE FOOD SAFETY LEVEL OF BEEF PREPARED AT DIFFERENT LOCATIONS?						
M		**Level of food security**					
	Beef Prepared at:	**Very low =1**	**Low =2**	**Moderate =3**	**High =4**	**Very high =5**	**No opinion =6**
1	Home prepared by you	1	2	3	4	5	6
2	Home prepared by another	1	2	3	4	5	6
3	Supermarket deli	1	2	3	4	5	6
4	Tavern /bar by attendant	1	2	3	4	5	6
5	Expensive dine-in restaurant	1	2	3	4	5	6
6	Medium cost dine-in restaurant	1	2	3	4	5	6
7	Low-cost fast food place	1	2	3	4	5	6

N	**FUTURE PURCHASE**	**Strongly Disagree =1**	**Disagree =2**	**Neutral =3**	**Agree =4**	**Strongly agree =5**
1	I can recommend anyone to a butcher that serves good quality meat	1	2	3	4	5
2	I can relate the price rate (R/kg) with the size of the cut (value for money)	1	2	3	4	5

THANK YOU FOR YOUR COOPERATION. ENKOSI...

Appendix B: Output Statistical Tables from SPSS

C1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	2	2.0	2.0	2.0
	strongly disagree	26	26.0	26.0	28.0
	disagree	8	8.0	8.0	36.0
	neutral	28	28.0	28.0	64.0
	agree	18	18.0	18.0	82.0
	strongly agree	18	18.0	18.0	100.0
	Total	100	100.0	100.0	

C2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	6	6.0	6.0	6.0
	disagree	10	10.0	10.0	16.0
	neutral	12	12.0	12.0	28.0
	agree	22	22.0	22.0	50.0
	strongly agree	50	50.0	50.0	100.0
	Total	100	100.0	100.0	

C3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	24	24.0	24.0	24.0
	disagree	14	14.0	14.0	38.0
	neutral	28	28.0	28.0	66.0
	agree	20	20.0	20.0	86.0
	strongly agree	14	14.0	14.0	100.0
	Total	100	100.0	100.0	

C4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	38	38.0	38.0	38.0
	disagree	20	20.0	20.0	58.0
	neutral	18	18.0	18.0	76.0
	agree	18	18.0	18.0	94.0
	strongly agree	6	6.0	6.0	100.0
	Total	100	100.0	100.0	